

THE EVOLUTION OF AVIATION ORGANIZATION  
WITHIN THE ARMY DIVISION AND AN  
APPRAISAL OF THE ROAD AVIATION  
ORGANIZATION

A thesis presented to the Faculty of the U. S. Army  
Command and General Staff College in partial  
fulfillment of the requirements of the  
degree

MASTER OF MILITARY ART AND SCIENCE

P.C. Gast, Major, USAF

Fort Leavenworth, Kansas  
1965

19990622 073

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 074-0188
<p>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503</p>			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED	
	17 May 1965	Master's Thesis August 1964 - May 1965	
4. TITLE AND SUBTITLE <b>THE EVOLUTION OF AVIATION ORGANIZATION WITHIN THE ARMY DIVISION AND AN APPRAISAL OF THE ROAD AVIATION ORGANIZATION</b>		5. FUNDING NUMBERS	
6. AUTHOR(S) Gast, P.C., Major, USAF			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Command and General Staff College 1 Reynolds Ave. Fort Leavenworth, KS 66027		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE A
13. ABSTRACT ( <i>Maximum 200 Words</i> ) The purpose of this thesis is to review the evolution of aviation organization within the Army division and to appraise the ROAD aviation organization. The review begins with a discussion of circumstances in 1942 which led to the authorization of light aircraft for field artillery units. Logistical as well as operational aspects are included in the review. It was found that the organization of aviation and concepts of operations has varied from one of decentralized control to that of centralized control. The appraisal of the ROAD division included the following considerations: (1) responsiveness to the commander's need measured in time, (2) efficiency measured in utilization of available aircraft, (3) operational capability of pilots, (4) division aviation special staff officer responsibilities, (5) organization and direct support maintenance.			
14. SUBJECT TERMS World War II; Divisional aviation; Tactical aviation; ROAD division; Army aviation; aviation logistics			15. NUMBER OF PAGES 147
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT U	18. SECURITY CLASSIFICATION OF THIS PAGE U	19. SECURITY CLASSIFICATION OF ABSTRACT U	20. LIMITATION OF ABSTRACT U

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(Abstract Approval Page)

Name of Candidate P. C. GAST, Major, USAF

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Approved for Publication by:

Charles J. Canella, Research and Thesis Monitor  
Donald M. Griggs, Member, Graduate Faculty  
John G. Dugay, Member, Graduate Faculty

Date 17 May 1965

The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the United States Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

The purpose of this thesis is to review the evolution of aviation organization within the Army division and to appraise the ROAD aviation organization.

The review begins with a discussion of circumstances in 1942 which led to the authorization of light aircraft for field artillery units. A chronological and historical review of the aviation organization follows. Logistical as well as operational aspects are included in the review. Sources of information includes field manuals, tables of organization and equipment, and official historical publications.

It was found that the organization of aviation and concept of operations has varied from one of decentralized control to that of centralized control. Factors which effected the degree of control and, thus, the organization are as follows: (1) concept of operations and mission of the entire division force, (2) mission of division aviation, (3) number of aircraft authorized and available.

The appraisal of the ROAD organization is limited to the capability of the organization to support current missions of division aviation; no attempt was made to appraise the quantity or type of aircraft used nor to appraise the purpose or mission for which they are employed. The appraisal included the following considerations: (1) responsiveness to the commander's needs measured in time, (2) efficiency measured in utilization of available aircraft, (3) operational capability of pilots, (4) division aviation special staff officer responsibilities, (5) organizational and direct support maintenance.

The appraisal was based solely on facts and opinions obtained from members of active divisions. Questionnaires were distributed to selected students attending the Army Command and General Staff College and selected personnel in fifteen Army divisions. Questionnaires were sent to commanders of the following elements in order to obtain information pertaining to both operational and logistical considerations: (1) division artillery, (2) brigades, (3) cavalry squadron, (4) support command, (5) maintenance battalion, (6) aviation battalion, (7) general staff.

In addition, a hypothetical organization proposed by the writer was examined and compared to the ROAD organization. Information extracted from questionnaires was also used in this part of the thesis.

This thesis makes conclusions pertaining to operational considerations. However, it was found that facts and opinions expressed by participants pertaining to the organization of aircraft maintenance was inconsistent, and, consequently, no conclusion was drawn. Apparently, the subject of organization for maintenance cannot be restricted to aviation.

In the last chapter, the writer listed and discussed immediate and long range considerations which, it is believed, should be examined prior to further reorganization. These considerations include both operational and maintenance problems.

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Approved by:

Charles J. Canella, Research and Thesis Monitor  
Frank M. Parsons, Member, Graduate Faculty  
~~John A. Dugay~~, Member, Graduate Faculty

Date 17 May 1965

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## PREFACE

The purpose of this paper is to review the evolution of the aviation organization within the Army division and to appraise the ROAD organization. The writer selected this subject for reasons as follows: (1) it provided an opportunity to learn more about the background of Army aviation, (2) it fulfilled an earnest desire to understand the current division aviation mission and concept of operations.

The writer was initially inclined to write about one of the controversial subjects of aviation. As an officer in the United States Air Force, the writer was particularly attracted to the subjects of missions of division aviation or the type and quantity of aircraft authorized in the division. However, it became apparent during initial research, that several boards and study groups have produced volumes of exhaustive findings and opinions pertaining to these subjects. Therefore, it was felt little could be added.

It was, admittedly, difficult to write an objective paper; in doing so it was necessary to analyze the subject as a disinterested person and to refrain from interjecting parochial views held by the writer. The first six chapters are objective; the last chapter includes personal opinions.

The following acknowledgements are made:

- (1) To Colonel Charles J. Cannella for his counsel and guidance.
- (2) To the officers in active divisions who completed questionnaires. Many were senior commanders who showed a great interest in the subject.
- (3) To fellow students who completed questionnaires.

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## INTRODUCTION

The purpose of this introduction is to provide background information pertaining to Army aviation and its organization at division level. In order to evaluate the present organization it is necessary to begin with a review of the organizational history of the War Department prior to and during World War II.

Army Regulation 95-5, dated 20 June 1941, created the Army Air Forces. Headed by the Deputy Chief of Staff for Air, the Army Air Forces coordinated and directed all Army air elements. A subsequent reorganization of the War Department, on 9 March 1942, created three autonomous commands designated as the Army Air Forces, the Army Ground Forces, and the Army Service Forces. All Army air elements were made organic to the Air Forces under a single commanding general and air staff.<sup>1</sup> As a separate command, the Army Air Forces accomplished missions as directed by the War Department or the applicable theater commander and were also responsible for supporting the Army Ground Forces with liaison aircraft and pilots.

Soon after the beginning of World War II, strong disagreements and controversies arose over who should control the Air Forces liaison

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<sup>1</sup>Richard K. Tierney, "The Army Aviation Story," United States Army Aviation Digest, (Fort Rucker: U. S. Army Aviation School) VIII (June 1962), p. 13.

aircraft when placed in support of Ground Forces. The Ground Forces charged that the Air Forces were not providing adequate support and, therefore, constantly pressed for a program that would provide organic liaison aircraft within the divisions.

The Air Forces maintained that an inadequate number of aircraft were available to provide optimum support for the Ground Forces and simultaneously accomplish high priority missions directed by the War Department.<sup>2</sup> The Air Forces consistently held the position that control of all aircraft should remain an Air Force function in order to insure optimum utilization of available aircraft. Economy of force could be achieved, the Air Forces reasoned, by dispatching aircraft to a unit only when required as opposed to each unit physically possessing aircraft.

Despite the strong position of the Air Forces, the Ground Forces did obtain organic aircraft at division level early in World War II and have since retained them. However, limitations on the use of aircraft were imposed by the War Department by delineating types of missions to be flown by Ground Forces versus Air Forces aircraft. Authorized use of division aviation has grown over the years to include transportation of company size units and armed reconnaissance. Nevertheless, the mission of aviation remains that of supporting the land battle.

Organization of division aviation has been a subject of controversy since the Army received its first airplane. The controversy on how to best organize and utilize aviation within the division has not been

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<sup>2</sup>Kent Roberts Greenfield, Col. Inf. Res., Army Ground Forces and the Air Ground Team Including Light Aviation Study No. 3, (Fort Monroe: Historical Section, Army Ground Forces, 1948), p. 15.

centered around where it should be employed or what missions and support it should perform. The controversy has been who within the division should control the aircraft and how can the available aircraft sorties be effectively managed to accomplish the missions and tasks.

There are three major divergent viewpoints in the Army regarding the control of aircraft and the assignment of aviators and maintenance personnel. One view is that each unit commander in the division, who has a continuous requirement for aviation, should closely control the aircraft and that personnel who fly and maintain the aircraft should be organic to that unit. Those who support this viewpoint insist that, unless the aircraft and crew are under a unit commander's control, he cannot be assured that aviation will be immediately responsive to his requirements. Another view is that most of the aircraft in the division should be consolidated in a single unit, under one commander, when there is an inadequate number of aircraft to permit an equitable distribution. During these austere periods, every effort is made to employ the same aircraft and crew with the same units on a daily basis. A third view is that aircraft in the division should be centrally controlled at all times to gain the maximum efficiency even when a relative abundance of aircraft exists in the division.

The organization of aviation within the current division is a compromise of the divergent viewpoints described above. Aircraft have been made organic to units which have a continuous requirement such as observation in division artillery. Conversely, approximately half of the aircraft are pooled in an aviation battalion to accomplish many other type tasks for divisional units who do not possess aircraft.

Has the Army found the best organization for its division organic aircraft? The following chapters review the organization of division aviation and appraise the present organization.

## CHAPTER I

### DECENTRALIZED ORGANIZATION

The purpose of this chapter is to chronologically review the history of division aviation from 1942 to 1954. Organization of aviation, during this era, was characterized by a concept of decentralized control. Factors which led the Ground Forces to decentralize aviation will be noted. The gradual formulation of policies and concepts of operation will be discussed. Growth in number of aircraft and the concurrent expansion of the organization within the division will be examined.

#### 1942-1945: Aircraft for Artillery

The first action to insure the availability of light aircraft support for the Ground Forces was taken in 1942. Field Manual 31-35, published in April of that year, indicated the Air Forces were to establish air support commands which would contain bomber, fighter, and observation aircraft. Ostensibly, these commands would support designated Army Ground Forces units in a theater of war.<sup>1</sup> Observation and liaison aircraft were to be grouped into a liaison element. The mission of the liaison element was to provide direct support to Ground Forces units

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U. S. War Department, Basic Field Manual 31-35, Aviation in Support of Ground Forces, (Washington: U. S. Government Printing Office, 1942), p. 1.

Aircraft within the element were formed into squadrons of eighteen aircraft of suitable type which, it was envisioned, would vary with the type mission each squadron was assigned. Each cavalry division and armored division were to be allotted one squadron.<sup>2</sup>

The degree of decentralization of control was indicated in the manual as follows: "Observation aviation will generally be sufficiently decentralized to permit each . . . division to plan the use of and call directly upon its supporting observation squadron for missions."<sup>3</sup> Field Manual 31-35 failed to specify command relationships to be achieved within the divisions; however, it did call for close liaison between the supported commander and the air support squadron. Although it was not specified that the liaison officer was to be part of the division staff it did provide, "such liaison is of sufficient importance that the observation unit commander will be designated as air adviser to the commander of the supported unit."<sup>4</sup> The aviation liaison officer preceeded what was later to be known as the aviation special staff officer.

The provisions of Field Manual 31-35, as discussed above, were not implemented in full. Joint training exercises involving the Ground Forces and Air Forces conducted to test the concept early in 1942 were judged to be unsuccessful. The failure was due to a shortage of observation aircraft and to a difference of opinion between the Ground Forces and

<sup>2</sup>Kent Roberts Greenfield, Col. Inf. Res., Army Ground Forces and the Air Ground Battle Team Including Organic Light Aviation Study No. 3, (Fort Monroe: Historical Section - Army Ground Forces, 1948), pp. 3-21.

<sup>3</sup>Field Manual 31-35, p. 20.

<sup>4</sup>Ibid., p. 22.

Air Forces pertaining to how aircraft should be employed. Consequently, little or no progress was made in developing and perfecting organization techniques and procedures.<sup>5</sup>

In June 1942, the War Department directed that observation aircraft would be organic to field artillery units. Each artillery battalion and the artillery headquarters in the infantry and armored division was authorized two aircraft; a total of ten aircraft in the infantry division and eight in the armored division.<sup>6</sup>

Although aircraft were organic to field artillery units in the Ground Forces the Army Air Forces continued to bear primary responsibility for aviation matters within the War Department. Therefore, responsibilities for equipment, maintenance, and training had to be divided between the two major commands; first and second echelon maintenance was performed by the artillery battalion while the Army Air Forces provided third echelon maintenance. The Army Ground Forces trained the majority of pilots at Fort Sill, Oklahoma, graduating the first pilots in September 1942. However, it was not until late 1943 that field artillery aviation sections were built up to a level considered adequate for combat.

Artillery officers insisted that pilots in artillery battalions should be trained as observers who could adjust artillery fires from a single seat airplane. Preferably, the pilots would be branch trained artillery officers. But the Army Air Forces strongly opposed this thinking, and believed artillery observation should be made by a trained

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<sup>5</sup>Greenfield, pp. 9-21.

<sup>6</sup>Ibid., p. 24.

observer who could accompany a pilot in a multiplace airplane. The latter procedure, argued the Air Forces, would allow all aircraft and pilots to be utilized on other types of missions when not in support of artillery units. This procedure was held to be preferable to assigning designated pilots and aircraft to field artillery. In practice, multiplace aircraft were used in the artillery battalions. A radio mechanic accompanied the pilot and transmitted directions to firing units.<sup>7</sup>

Commanders of divisions in combat consistently found themselves critically short of aircraft. Consequently, division commanders frequently pooled their organic artillery aviation under the direct control of division or division artillery headquarters because aircraft were frequently required to accomplish missions other than artillery observation. In this manner, the division commanders were exercising centralized control and using the aircraft how and where they could best serve the entire division.

Even where division organic aviation was not centralized at a division airfield, division headquarters frequently directed the artillery to make aircraft available so that, "the use to which liaison planes were effectively put included courier and liaison service; reconnaissance . . . column control by swiftly advancing armor; emergency resupply, . . . and evacuation of wounded from the front lines . . ."<sup>8</sup>

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<sup>7</sup>Ibid., pp. 24-58.

<sup>8</sup>Ibid., p. 99.

The War Department, in the summer of 1943, proposed that all artillery within the divisions be centralized at a division airfield.<sup>9</sup> However, the Army Ground Forces resisted, stating:

In the course of the argument over the question of centralizing the artillery planes of each division the points made by General McNair in his resolute stand for having them remain organic in artillery units were as follows: (1) "The planes are right where they are needed, not back at some centralized field."<sup>10</sup> (2) "The present organization, unlike any other, insures satisfactory unit communications." (3) "By daily association, complete understanding between the pilots and other battalion officers is obtained."<sup>11</sup>

The resulting decision, by the War Department, provided that field artillery would retain organic aircraft. Army Air Forces was directed to provide one squadron of liaison aircraft for each field army to be used for command and liaison transportation. Separate divisions operating as an independent force were provided a flight of aircraft which varied in number of aircraft according to the needs of the supported divisions.<sup>12</sup>

In the writer's opinion, the basic issue of centralized versus decentralized control was adversely influenced by the intra-component debate on the control of liaison aircraft. The Army Ground Forces were wary that the Army Air Forces might convince the War Department that centralization was the superior way to manage and control all aircraft including observation aircraft. Once the aircraft were centralized, the Ground

<sup>9</sup>Ibid., p. 59.

<sup>10</sup>Ibid., p. 60, quoting memo of General McNair for Mr. Meloy, 10 Jul 43, no subject.

<sup>11</sup>Ibid., quoting extractions from paragraph 3, Army Ground Forces 2d indorsement to CG R&SC, 5 Nov 43.

<sup>12</sup>Liaison Aircraft with Ground Force Units, Report of the General Board, U. S. Forces, European Theater, Study No 20, (APO 408: U. S. Forces, European Theater, 1946) Appendix 2, 2.

Forces reasoned, the Air Forces would be armed with an argument which they would use to regain control of all aviation and provide aviation support as it was envisioned in Field Manual 31-35. This prevented a logical evolution of the organization of aviation.

The assignment of aircraft to each artillery battalion and the Army's determination that pilots should be trained artillery observers was the first step in establishing doctrine for Army aviation. The concept calling for the user to physically possess aircraft has prevailed within the Army. Army aviators, even today, are preferably trained in the branch in which they support.

Army Ground Forces continued to press for authorization of organic aircraft in the division headquarters; the added aircraft were needed for personnel and supply transportation and medical evacuation. However, these efforts were blocked, and the organic ground force aviation program remained almost unchanged until the summer of 1945.

#### 1945-1948: Years of Austerity

The War Department authorized additional liaison aircraft to each division just five days prior to the end of the war. The number of additional aircraft varied from six for the infantry division to nine for each armored division. Distribution of aircraft within the infantry division is shown in figure 1.

Year	Division HQ Company	Division Artillery	Regiment	Combat Engineer Battalion
1945	3 <sup>13</sup>	10	1 <sup>14</sup>	1 <sup>15</sup>
1948	8 <sup>20</sup>	10 <sup>17</sup>	0 <sup>19</sup>	0 <sup>18</sup>

Figure 1. Aircraft distribution, infantry division

Although additional aircraft were authorized to divisional units, it is unlikely many were actually provided; the total number of liaison aircraft in the Ground Forces had dropped from 1600 in 1944 to approximately 200 within two years following the war.<sup>16</sup> Army Ground Forces

<sup>13</sup>U. S. War Department, TO&E 7-2-OS, Headquarters Company, Infantry Division, (Washington: U. S. Government Printing Office, 5 Nov 45), p. 4.

<sup>14</sup>U. S. War Department, TO&E 7-12-OS, change No 3, Headquarters and Headquarters Company, Infantry Regiment, (Washington: U. S. Government Printing Office, 15 Nov 45), p. 3.

<sup>15</sup>U. S. War Department, TO&E 5-16-OS, Headquarters and Headquarters Company, Engineer Combat Battalion, Divisional, (change No 3) (Washington: U. S. Government Printing Office, 2 Nov 45), p. 3.

<sup>16</sup>R. Earl McClendon, Army Aviation 1947-1953, an Air University Documentary Research Study, (Maxwell AFB, May 1954), p. 5.

<sup>17</sup>U. S. Department of the Army, TO&E 6-10N, Division Artillery, Infantry Division, (Washington: U. S. Government Printing Office, 2 Jun 48), p. 4.

<sup>18</sup>J. S. Department of the Army, TO&E 5-16N, Headquarters, Headquarters and Service Company, Engineer Combat Battalion, Divisional, (Washington: U. S. Government Printing Office, 3 May 48), p. 14.

<sup>19</sup>U. S. Department of the Army, TO&E 7-12N, Headquarters and Headquarters Company, Infantry Regiment, (Washington: U. S. Government Printing Office, 21 Apr 48).

<sup>20</sup>U. S. Department of the Army, TO&E 17-36N, Headquarters, Headquarters and Service Company, Heavy Tank Battalion, (Washington: U. S. Government Printing Office, 23 Apr 48), p. 12.

continued to rely on the Army Air Forces for third and fourth echelon maintenance activities, and for major aircraft supplies, equipment, and repair parts.

The provisions of the National Security Act of 1947 formally divided the Army Ground Forces and Army Air Forces into the Department of the Army and the Department of the Air Force. The Army could not initially provide logistical support for its organic aircraft without assistance from the Air Force. Hence, the Air Force continued to provide field maintenance support for all divisional aircraft for months after the separation of forces. The first indication of aircraft field maintenance to be organic to the division was the transfer of that function from the Air Force to the Army in 1949 by Joint Army and Air Force adjustment Regulation No 4-11-2. The provisions of the joint regulation were applied immediately in the zone of the interior but were not to be implemented in overseas areas until 30 June 1950.

The overall shortage of aircraft within the Army undoubtedly affected the divisions. The problem of how to effectively utilize the few aircraft available in the divisions was partially solved by centralization of aircraft. Ten aircraft organic to division artillery remained in the tables of organization and equipment published in 1948. However, authorizations for all other units were withdrawn with the exception of division headquarters as shown in figure 1. Provisions were made to augment the regimental headquarters and heavy tank battalion when they were detached from the division.<sup>21</sup>

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<sup>21</sup>U. S. Department of the Army, TO&E No 7-2N, Headquarters Company, Infantry Division, (Washington: U. S. Government Printing Office, 7 Jul 48), p. 12.

The decision to pool aircraft in the headquarters company was a significant change in previous policy in view of the fact Army Ground Forces took an official stand of decentralization of organic aviation when it received the first authorization in 1942. Field Manual 20-100 did not indicate a change in doctrine to reflect the centralization of aircraft although that, in itself, is not surprising since the manual covered the period of 1947 to 1952 when many changes in policy and doctrine were occurring.<sup>22</sup>

1948 - 1952: Doctrine Formulated

Essentially, 1948 saw the first formal organization of aviation within the division. Centralization of aircraft and pilots in the division headquarters company plus those in the field artillery units made it necessary for division headquarters to exercise some degree of control. The addition of the light aviation section, in 1948, to the division staff provided a means to coordinate aviation.<sup>23</sup> The aviation field manual did not specify the duties of the staff officer<sup>24</sup> Field Manual 101-5, Staff Officers Field Manual, failed to list the division aviation officer as a special staff officer.

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<sup>22</sup>U. S. Department of the Army, Field Manual 20-100, Army Aviation, (Washington: U. S. Government Printing Office, 1952).

<sup>23</sup>U. S. Department of the Army, TO&E 7-IN, Headquarters, Infantry Division, (Washington: U. S. Government Printing Office, 7 Jul 48), p. 2 and 4.

<sup>24</sup>U. S. War Department, Field Manual 20-100, Army Ground Forces Light Aviation, (Washington: U. S. Government Printing Office, Sep 47).

The Department of the Army and the Air Force jointly published Joint Army and Air Force Adjustment Regulation No. 5-10-1 in May 1949, which, for the first time, formally delineated functions to be performed by Army organic aviation as follows:

- (a) Maintaining aerial surveillance of enemy forward areas for the purpose of:
  - 1. Locating appropriate targets.
  - 2. Adjusting fire.
  - 3. Obtaining information on hostile and enemy defense forces.
- (b) Aerial route reconnaissance.
- (c) Control of march columns.
- (d) Camouflage inspection of ground force areas and installations.
- (e) Local messenger and courier service.
- (f) Emergency aerial evacuation.
- (g) Emergency wire laying.
- (h) Limited aerial resupply.
- (i) Limited front line aerial photography.<sup>24</sup>

Soon after the publication of Joint Army and Air Force Adjustment Regulation 5-10-1, the Army assigned to the Ordnance Corps the responsibility for logistical support of Army aviation.<sup>25</sup> However, this maintenance function was to remain in the Ordnance Corps for little more than three years when it was transferred to the Transportation Corps. Meanwhile, neither the ordnance maintenance battalion in the armored division<sup>26</sup> nor ordnance medium maintenance company in the infantry division<sup>27</sup> were specifically organized or manned to absorb this additional workload. In September 1949, ordnance light aircraft maintenance companies were activated. One company was assigned to each field army

<sup>25</sup>McClendon, p. 7.

<sup>26</sup>U. S. Department of the Army, TO&E 9-65N, Ordnance Maintenance Battalion, Armored Division, (Changes 1 and 2) (Washington: U. S. Government Printing Office, 15 Sep 50 and 15 Nov 50).

<sup>27</sup>U. S. Department of the Army, TO&E 9-7, Ordnance Medium Maintenance Company, (Changes No 1 and 2) (Washington: U. S. Government Printing Office, 15 Sep 50 and 9 Feb 51).

or independent corps; its capabilities provided for field maintenance support to divisions and to other units in the field army which possessed aircraft. Each company was capable of providing field maintenance support of 150 aircraft. A maintenance platoon was sent forward into the division area to perform field maintenance or, when necessary, to recover aircraft to the rear.<sup>28</sup>

There was little change in distribution of aircraft within the division from 1948 to 1952. However, there was much discussion within the Army pertaining to the organization of aviation, and by 1951, proposals called for the Army to organize aviation companies within divisions as a means to provide centralized control. Opponents to the establishment of aviation companies argued with success that, ". . . the principle of providing the commander who needs the aircraft in the accomplishment of his mission with operational control over his airplanes. . ."<sup>29</sup> was of paramount importance and the proposals were not accepted.

In the absence of firm Army doctrine pertaining to aviation, various service schools in the Army had also taken up the issue and by now were teaching "principles of employment." Perhaps these principles of employment should have been referred to as practices of employment since there was no current and printed Army doctrine. Aviation practices were discussed in the artillery conference of 1951. The discussions were primarily

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<sup>28</sup>U. S. Department of the Army, TO&E 9-148, Ordnance Light Aircraft Maintenance Company, (Washington: U. S. Government Printing Office, 22 Sep 49), p. 1.

<sup>29</sup>C. E. Haydock, Jr., Army Aviation, A Presentation for Lieutenant General T. B. Larkin, (OAC of S, G4, G. S. U. S. A.: 22 Jan 51), p. 1.

directed toward field artillery employment of organic aviation. The briefing at the artillery conference stressed the following "principles."

The first . . . is freedom of utilization. This means that the commanders having aircraft in their units, must be permitted to employ his aviation section freely in any manner which will contribute to the combat effectiveness of his unit. . . . Division headquarters and division artillery, . . . should not, unless absolutely necessary, hinder the battalion commanders. . . .

The second principle is integrity of command. The unit aviation section must be treated as any other unit facility. Higher echelon commander [sic] should exercise no more control over aviation in subordinate units than is exercised over weapons or ground vehicles. Further, a pilot who is a part of a unit will do a better job for his own unit than he would for another. Also, a unit commander and his staff officers will be more willing to trust important missions to their own people whom they know, than a stranger whose ability is unknown.

The third principle is immediate availability to the unit commander. It must be physically available by being located in close proximity to the unit command post.<sup>30</sup>

Field artillery had long followed these practices. Battalion commanders in the division had enjoyed organic aircraft since 1942. However, the division headquarters company could not readily operate under these principles because it was committed to many tasks in addition to providing transportation for the commanders and his staff, the three regimental commanders, and any other unit which required aviation support. Flight operations had to be controlled by one agency to insure the various units were supported. In summary, artillery aviation was employed in an extremely decentralized manner while on the other hand aviation in the headquarters company was centralized and controlled at division level.

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<sup>30</sup>George E. Handley, Principles of Employment of Army Aviation, Report of the U. S. Army Artillery Conference, 27-31 Aug 51 (Fort Sill, Oklahoma: The Artillery School, 1 Oct 51), annex C, appendix C, p. CC5. The report, in its entirety, is classified secret, restricted data.

The artillery school placed operations into two categories. The first category concerned operations where units controlled their own aircraft and the second involved scheduled operations where a higher headquarters such as divisions or division artillery scheduled the use of aviation. The latter, scheduled operations, were judged to be preferable only when a division-wide requirement existed for surveillance flights; centralized control would economize flying time. Centralized control was thought to be necessary in order to preserve secrecy by restricting flight operations during relief operations or a build up of forces. It was also considered that aircraft should be pooled to accomplish special missions. Further examples of situations where centralized operations were desirable are as follows: (1) whenever aircraft were unable to follow their unit, because of darkness or weather, (2) Whenever the terrain situation was too formidable to prepare more than one landing field, (3) whenever the parent unit was unable to provide the required logistics support.

Actually, the list of advantages for decentralized operations, as presented to the conferees, was more impressive than that for centralized operations. It was emphasized that aircraft should not be pooled when a unit was making a main attack, during a fluid or rapidly changing situation, or during an exploitation phase. Although many others were listed, the following extract represents the thinking of the school:

The last big advantage is that a unit airfield will permit better tactical control by the unit commander over his aviation section. When his people are back at a common airfield, he will find that much of his control is being usurped by the higher headquarters. (Italics mine.)<sup>31</sup>

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<sup>31</sup>Ibid., p. CC 7.

1952-1954: Organization Studied

1952

In May 1952, tables of organization and equipment were changed to provide for the return of organic aviation in the infantry regiment. Whereas the infantry division headquarters company was authorized eight aircraft and the regiment none from 1948 to 1952, the change provided for only three aircraft in the division headquarters company<sup>32</sup> and one aircraft in each of the three regiments.<sup>33</sup> The combat engineer battalion, within the infantry division, was authorized a helicopter,<sup>34</sup> and the signal battalion was authorized two helicopters.<sup>35</sup> Similar authorizations were made for the armored division. This trend in organization of aviation and the concept of operation had reversed and now the organization was almost identical to that of early 1948.

A major factor which undoubtedly influenced the Army to revert back to the decentralized operation was the increased availability of aircraft. The nation's build up of forces, during the Korean conflict, included a great increase of Army aircraft. In June 1950, the total number was 725;

<sup>32</sup> U. S. Department of the Army, TO&E 7-2, Headquarters Company, Infantry Division, (Washington: U. S. Government Printing Office, 15 May 52), p. 13.

<sup>33</sup> U. S. Department of the Army, TO&E 7-12, Headquarters and Headquarters Company, Infantry Regiment, (Washington: U. S. Government Printing Office, 15 May 52), p. 19.

<sup>34</sup> U. S. Department of the Army, TO&E No 5-6, Headquarters, Headquarters and Service Company, Engineer Combat Battalion, Divisional, (Washington: U. S. Government Printing Office, 15 May 52), p. 22.

<sup>35</sup> U. S. Department of the Army, TO&E No 11-7, Signal Company, Infantry Division, (Washington: U. S. Government Printing Office, 15 May 52), p. 26.

in June 1951, the total was 1,094; in June 1953, 2,053 were in the active Army inventory.<sup>36</sup> Although the inventory had increased by a factor of ten in less than four years, the Army was much larger and therefore a greater requirement for aviation existed in 1952. Notwithstanding the increased requirements for aviation, the Army now found itself relatively rich in aircraft when compared to 1948. While this situation may not have been the decisive consideration in the move to decentralization, it certainly permitted it to occur.

The publication of the revised Field Manual 20-100, in 1952, was in actuality the first Army document published which reflected the official and current Army doctrine for division aviation. The mission of Army aviation was stated as follows:

- a. Expedite and facilitate the conduct of operations on land.
- b. Improve mobility, command, control, and logistic support of Army Forces.
- c. Provide greater battlefield dispersion and maneuverability under conditions of atomic warfare.<sup>37</sup>

The manual provided for a clear concept of decentralization. It restated the principles put forward by the artillery school and thereby made these principles doctrine.

The theme of decentralization was also prevalent in supply and maintenance. In each unit which possessed aircraft the senior aviation officer was designated the unit aviation officer. The aviation officer was responsible for the maintenance of aircraft and equipment within his section. He was charged to insure prescribed standards of maintenance

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<sup>36</sup>McClendon, Army Aviation, p. 29.

<sup>37</sup>U. S. Department of the Army, Field Manual 20-100, Army Aviation, (Washington: U. S. Government Printing Office, 25 Feb 52), p. 1.

were maintained, and he was designated the supervisor of all maintenance personnel in the aviation section of each unit. The aviation officer's supervision was limited to first and second echelon maintenance. A non-divisional unit, the ordnance light aircraft maintenance company, performed field maintenance on his aircraft. Consequently, there was no single supervisor who had the responsibility to supervise all three levels of maintenance which was conducted in the division area. It is possible that two sets of standards and two levels of quality control were present, one used by the division aviation section and the other by the ordnance light aircraft maintenance company.<sup>38</sup>

Training of pilots and crew was considered to be best accomplished when conducted in the unit possessing the aircraft. Supervision of the training program was the unit commander's responsibility. There was no requirement for a division-wide training program although the manual stated that it might be desirable to centralize training for purposes of standardization and economy of training space.<sup>39</sup>

Staff coordination, techniques, and procedures rated approximately one page in Field Manual 2-100; it specified that "detailed staff coordination on specific matters is accomplished by direct contact between the unit aviation officer and other members of the staff. . . ."<sup>40</sup> However, there were few specific supervisory roles for the division aviation

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<sup>38</sup>Ibid., p. 90.

<sup>39</sup>Ibid., p. 93.

<sup>40</sup>Ibid., p. 10.

officer on the special staff; nor did other division manuals specify duties for the division aviation officer.<sup>41</sup> Field Manual 101-5, Staff Officers Field Manual, published in 1950 with changes, failed to even list the aviation officer as a staff officer. Apparently, the division aviation special staff officer was responsible for little more than advising the commander and his staff in addition to supervising the division airfield operation. In summary, division aviation in 1952 remained extremely decentralized with a minimum of division control and supervision.

1953

There were no further significant changes in the organization of aviation within the division until July 1953. At this time the responsibility for Army aviation logistics, including field maintenance, was transferred from the ordnance corps to transportation corps. The transportation army aircraft maintenance company was formed to replace the ordnance light aircraft maintenance company. The company performed field maintenance and supply support of all aircraft in the field army. A company was assigned to each field army or independent corps with the capability of providing third echelon maintenance support for 325 two-place aircraft.<sup>42</sup> This change was to have little effect on the organization of

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<sup>41</sup>U. S. Department of the Army, Field Manual 17-100 Armored Division and Combat Command, (with changes 1, 2, and 3) (Washington: U. S. Government Printing Office, 1 Dec 49).

<sup>42</sup>U. S. Department of the Army, TO&E No 55-457, Transportation Army Aircraft Maintenance Company, (Washington: U. S. Government Printing Office, 25 Jul 53), p. 1.

aviation within the division, but it did effect the quality of maintenance, as will later be seen.

The organization of division aviation was frequently a discussion topic at high level conferences. The finding of one conference is reviewed to illustrate the thinking in 1953. The conference entitled "Review of the Army Aviation Program," was held at the Office, Chief of Army Field Forces, Fort Monroe, Virginia, 3-7 Aug 1953. One of the purposes of the conference was to review the organization of aviation at division level. Representatives of major commands, both from the United States and overseas, and other interested agencies attended the conference. The conference determined that the division aviation organization was weakened by:

- (1) Lack of operational facilities (navigation, communication, crash rescue, field lighting).
- (2) Lack of administrative support (mess).
- (3) Lack of provisions for adequate maintenance supervision.
- (4) Lack of operational supervision to prevent duplication of missions and insure best utilization of aircraft.<sup>43</sup>

A partial reason for the inadequacy of maintenance supervision was attributed to the fact that aircraft maintenance spaces were not transferred from the ordnance corps to the transportation corps. Division commanders did not have command or control of the transportation aircraft maintenance company. Consequently, it was difficult, if not impossible to achieve quality control and standardization in aircraft maintenance

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<sup>43</sup>Office, Chief of Army Field Forces, Review of the Army Aviation Program, a Report Prepared by the Office, Chief of Army Field Forces, (Inclosure 2 to Inclosure 2) (Fort Monroe, Office, Chief of Army Field Forces, 29 Aug 53), p. 2. The report, in its entirety, is classified secret.

functions. The conferees agreed that consolidation of second echelon maintenance equipment and personnel at the division airfield would prove to be more efficient.

From an operational viewpoint the conference found, "although assignment of Army aircraft to the using unit has proven sound, centralized operation at a division airfield has proven advantageous under certain terrain and tactical conditions."<sup>44</sup>

The conferees agreed that the formation of an aviation company organic to the division would be a workable solution to the problems of division aviation. However, they felt that the conferees should not recommend the establishment of a division aviation company because this type of organization would not be workable in corps, army, or in other non-divisional units; it was considered necessary for all Army aviation to be organized in the same pattern. In retrospect, one can question the premise that all types of units within the Army should have the same organization, a premise that has not been retained.

The conclusions of the conference were as follows:

- a. Army aviation, in all arms and services except Transportation Corps and Medical Service should be organic to using unit. . . .
- .....
- d. Army aviation officers should be included as a part of the G-3 section at division, . . . levels to:
  - (1) Provide supervision over Army activities.
  - (2) Provide a source of information concerning Army aviation for the commander and other staff sections.<sup>45</sup>

<sup>44</sup>Ibid., p. 3.

<sup>45</sup>Ibid., pp. 3-4.

United States Army, Europe, concurred with the content of the staff study; United States Army Forces, Far East, also concurred but recommended that more consideration be given to the formation of an aviation company organic to the division. U. S. Army Forces, Far East, was concurrently conducting field tests of a division aviation company.

Although the conferees did not recommend a centralized organization, underlying changes in attitude were reflected in the report. The proposed attachment of the aviation staff officer to the G-3 staff, the proposal for moves toward consolidation of maintenance, and the acceptance that an aviation company might be workable all were indications of changes to come in organizational concepts within the division.

## CHAPTER II

### NEW CONCEPTS TESTED

The purpose of this chapter is to review two division aviation organizations and concepts of operations tested by the Army from 1954 to 1957. One of the organizations, Atomic Test Field Army, was not established as a standard division. However, a detailed review is necessary because, (1) this organization was developed, tested and seriously considered by the Army, (2) some of its concepts and organization were used in standard organizations, (3) reference will be made to the organization in later chapters.

#### Atomic Test Field Army

Aviation was not the only subject of division reorganization in 1954. The Department of the Army was considering reorganizing the entire division. The influence of atomic weapons and new conventional weapon systems were major considerations in the formulation of the proposed reorganization as was reflected in the title, "Atomic Test Field Army," hereafter abbreviated ATFA. The ATFA concept was conducted as a test and therefore only selected divisions were organized. Designated divisions, both infantry and armored, were organized for the tests in 1954.

Supposedly, the major advantage of the ATFA concept was its great flexibility which would allow the division to react to changing and

vertical alignment in the manner shown in fig. 1.2. The functions of mobility, supply and route of the division were placed under the direct control of the division headquarters. In keeping with this concept, all aircraft in the division headquarters were normalized into one mobile aviation company which was known under operational control of the aviation staff officer as part of the division current training organization.

He (the aviation staff officer) supervised all Army aviation matters within the command; maintained liaison with the aviation staff of higher commands and the major units; coordinated the preparation, Army aviation operations with other services; and ensured the smooth operation and safety in preparing the Army aviation portion of the combat plan, orders and returns. The aviation officer exercised operational control of the combat aviation company and its assigned type by an assistant division aviation officer. . . .<sup>1</sup> (Italics mine.)

The aviation company commander was responsible for administrative and training matters and aircraft fueling etc. The aviation company was one of three companies organic to the division headquarters (as shown in figure 1.3). The organization and structure provided for the administrative requirements of the company, with the exception of aircraft field maintenance, was as follows:

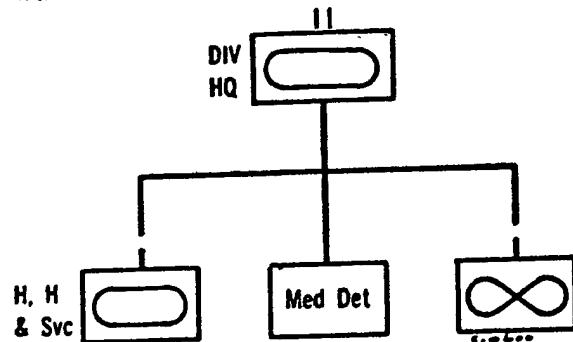


Figure 2. AFPA division headquarters maintenance.

<sup>1</sup>Office, Chief of Army Field Forces, Circular Inst No. 17-193-1, The Armored Division, (Fort Monmouth: Office, Chief of Army Field Forces, 29 Oct 54), p. 12.

<sup>2</sup>Ibid., p. 12.

<sup>3</sup>Ibid., p. 7.

Thirty-nine aircraft were authorized in the infantry<sup>4</sup> and armored division<sup>5</sup> tables of organization and equipment which were effective 30 September 1954. The aviation company was identically organized in the infantry and armored division as shown in figure 3.<sup>6</sup>

#### Operations

The division included four major tactical commands; these were three combat commands and division artillery. One of the three flight groups, shown in figure 3, provided support to a combat command. An additional flight group was formed whenever division artillery was in a general support role although this was unusual because the artillery was normally in direct support of a combat command.

Each flight group was tailored according to its mission. If it was in support of one of the combat commands it consisted of, (1) a mixture of fixed wing liaison aircraft used primarily for transportation of key personnel, (2) observation aircraft used in support of artillery which was supporting the combat command, (3) utility aircraft for aero-medical evacuation and transporting supplies. If a flight group was formed to solely support artillery, which was temporarily in general support of the division, the flight group would be made up of observation

<sup>4</sup>Office, Chief of Army Field Forces, TO&E 1-7 ATFA, Combat aviation Company, Infantry Division, (Fort Monroe: Office, Chief of Army Field Forces, 30 Sep 54).

<sup>5</sup>Office, Chief of Army Field Forces, TO&E 1-17 ATFA Combat Aviation Company, Armored Division, (Fort Monroe: Office, Chief of Army Field Forces, 20 Sep 54), p. 5.

<sup>6</sup>TO&E 1-17 ATFA, p. 2.

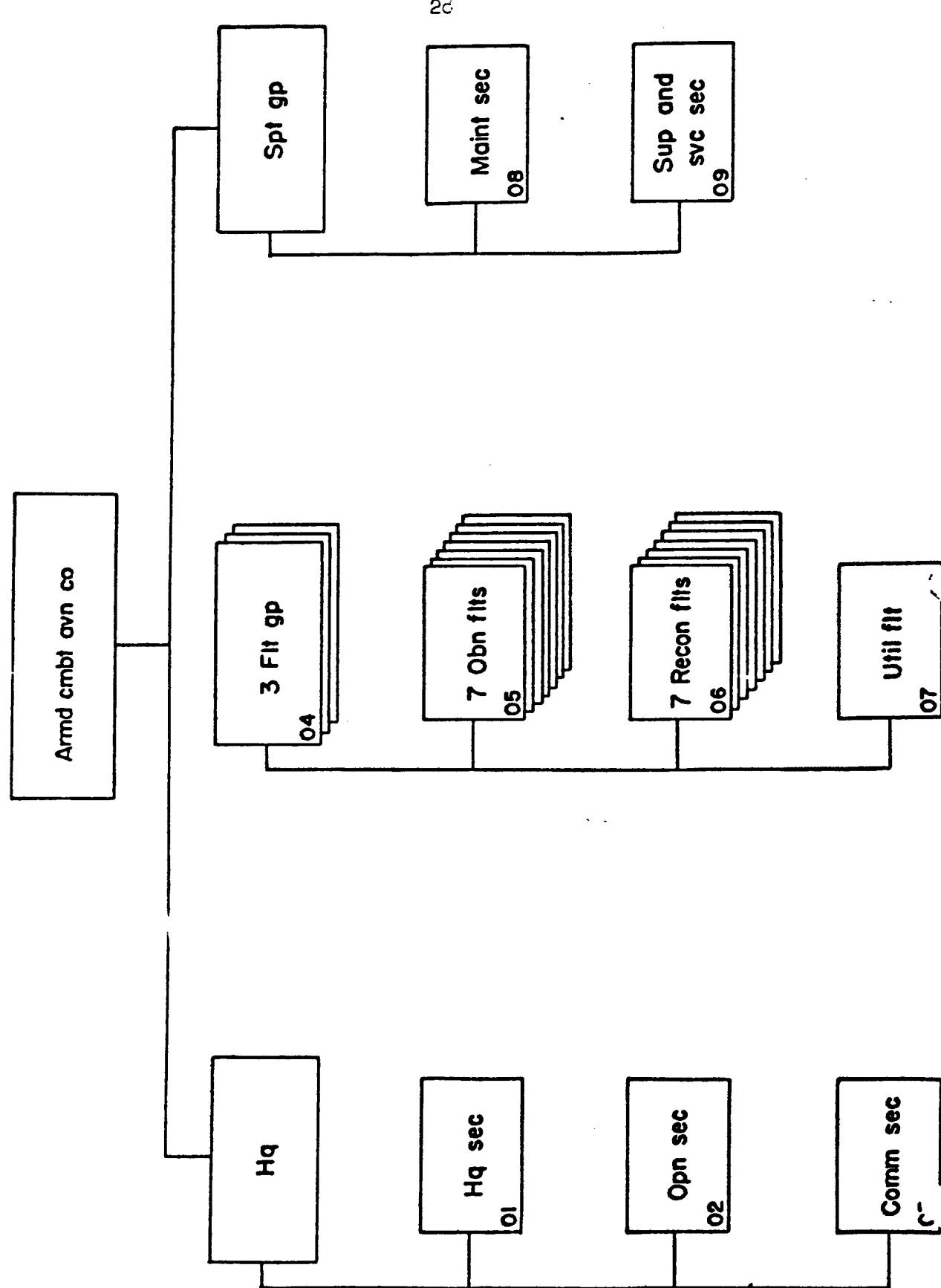


Figure 3. NMFA Armored Aviation Company

aircraft. Additional flight groups could be formed to support other agencies of the division as required; examples of the latter include long range patrols, reconnaissance, troop movement, and any other mission initiated by division headquarters. Although all pilots and aircraft were grouped into the aviation company, flight operations supervisors were instructed to habitually place flight groups in support of or attached to the same combat command where practicable.<sup>7</sup> This concept was intended to promote a good working relationship between the flight group and the supported agency.

The operation section which was located at division headquarters was the focal point for submission of aviation requirements within the entire division. Requirements were established by various commanders, staff, or major combat forces. The combat commands, when deployed forward, habitually required an entire flight group. There were many command and liaison type flights to be flown each day. The aviation section assigned priorities when the number of requests exceeded the number of aircraft available; these were forwarded to the aviation company as they were established. The company commander, who was responsible for the organization of the flight groups, scheduled the appropriate quantity and type of aircraft to accomplish the assigned mission.<sup>8</sup>

Aircraft normally operated from a division airfield where adequate lighting and instrument facilities were located. If this policy could

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<sup>7</sup>Office, Chief of Army Field Forces, Training Text No 1-100-1, Army Aviation Combat Operations, (Fort Monroe: Office, Chief of Army Field Forces, 30 Sep 54), pp. 105-107.

<sup>8</sup>Ibid.

not be adhered to because of distances between the airfield and the supported unit, aircraft would operate from a forward landing area adjacent to the unit; however, they were expected to return to the division airfield each evening. When unusually long distances or other circumstances made the return of aircraft to the division airfield impractical, flight groups were attached to the supported force until the situation allowed the aircraft to return to normal operations.<sup>9</sup>

#### Maintenance

The logistics support was also organized somewhat differently in the ATFA aviation company. All logistics support personnel and most of the support equipment were pooled in the combat aviation company leaving no aircraft support capabilities in the combat command or division artillery. The support group was subdivided into a maintenance section and a supply and service section. The maintenance section was responsible to perform first and second echelon maintenance on aircraft and related equipment. Maintenance teams were formed to accompany flight groups whenever the flight group anticipated being separated from the company for extended periods. Maintenance teams were also formed as required to go forward to assist the crew chief whenever he was incapable of repairing the aircraft.<sup>10</sup> Field maintenance was performed by the transportation aircraft maintenance company organic to field army.

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<sup>9</sup>Ibid.

<sup>10</sup>Training Text 1-100-1, p. 109.

Summary

The ATFA combat aviation company was the Army's first and last experiment in total centralized control of aircraft. The AFTA tests were completed in 1956. There were several new concepts tested for the first time as follows: (1) All divisional aircraft were pooled into one aviation unit; (2) all operational requirements submitted to one divisional agency who established priorities and assigned missions; (3) an agency which was not in a command position exercised operational control; (4) organizational maintenance was functionalized and grouped into one divisional organization which provided for centralized control.

Reorganization Current Army Division

The ATFA program was concluded in mid 1956 only to be followed by tests which were designed to test new concepts in land warfare. The new organization was based on current Army precepts quoted as follows:

The rapid evolution of the tools of war has brought revolutionary changes in the concepts of ground warfare. Atomic weapons in quantity, potential improvements in target acquisition, missiles of vastly increased range, and greatly improved means for battlefield and strategic mobility contribute to these dynamic changes. In its adjustment to these improved weapons and methods, the Army must combine the lessons and experience of the past with a clear view of the future which requires the utmost in vision, wisdom, and flexibility of mind.<sup>11</sup>

Three types of divisions were reorganized and equipped to participate in the tests. The infantry division organization was referred to as

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<sup>11</sup>United States Continental Army Command, Training Text 7-100-2, The Infantry Division, (Fort Monroe: U. S. Continental Army Command, March 1957), p. 1.

Reorganization Current Infantry Division, hereafter abbreviated ROCID; the armored organization was referred to as Reorganization Current Armored Division, hereafter abbreviated ROCAD; the airborne organization was referred to as Reorganization The Airborne Division, hereafter abbreviated ROTAD.

The infantry division combat aviation company was organized as shown in figure 4.<sup>12</sup> Organizational charts of the ROCAD and ROTAD company were slightly different than the ROCID chart shown in figure 4. However, operational concepts were identical. For ease and simplification, only the ROCID company will be reviewed; all remarks pertaining to the ROCID test company are appropriate for the ROCAD and ROTAD test companies.

Although all aircraft were assigned to the aviation company, the operational control of most of the aircraft was taken from the aviation company commander and given to the major combat element commanders. Some of the aircraft, including those which were used for general support, were retained under the control of the company commander. Thus, two concepts of control were employed: decentralized control was implemented to control aircraft placed in support of combat elements, and centralized control was implemented to control general support aircraft. The following quotation from the aviation training text describes this concept:

The primary purpose for organizing aviation into companies is to provide more efficient maintenance supply, and administrative. The aviation company operates in decentralized support of the division and its battle groups. Centralized control in employing aircraft of

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<sup>12</sup>United States Continental Army Command, Training Text 7-100-2, The Infantry Division, (Fort Monroe: U. S. Continental Army Command, March 1957), p. 15.

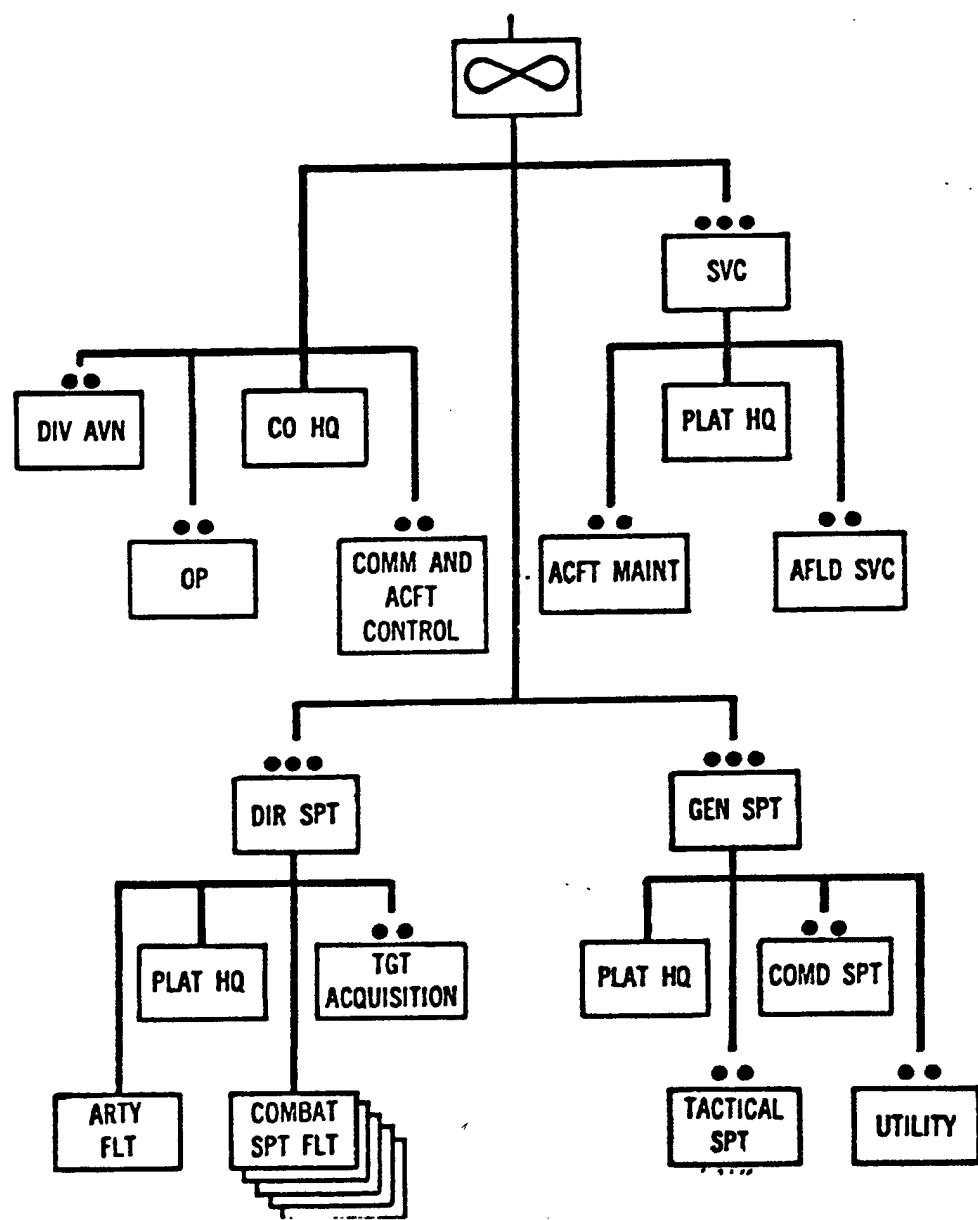


Figure 4. ROCLD test division. Combat Aviation Company

the division aviation company will seldom be necessary or advisable. The aircraft must remain immediately available to ground commanders. Some duplication of aviation effort within the division is preferable to possible delays which might occur under a plan of centralized control of the aircraft.<sup>13</sup>

Increases and diversification of tasks to be accomplished by aviation created a requirement for additional aircraft within the division. Accordingly, the infantry test division was authorized fifty aircraft;<sup>14</sup> the armored, fifty;<sup>15</sup> the airborne, fifty-three.<sup>16</sup> Requirements for personnel increased to man the added aircraft and to perform the more complicated maintenance on the new type aircraft. Personnel totals in each of the three aviation companies averaged 244 by 1957,<sup>17</sup> as compared with 140 in the initial ATFA infantry division aviation company.

#### Division Special Staff

The aviation officer or his representative was required to be on duty in the G2-G3 operations center. General guide lines were given in the text regarding operational control which was to be exercised by the

<sup>13</sup>Training Text 1-100-1, p. 10

<sup>14</sup>Headquarters Continental Army Command, TO&E 1-7T ROCID Combat Aviation, Infantry Division, (Fort Monroe: Headquarters Continental Army Command, 20 Dec 56), p. 23.

<sup>15</sup>Headquarters Continental Army Command, TO&E 1-17T ROCAD, Combat Aviation Company, Armored Division, (Fort Monroe: Headquarters Continental Army Command, 1 Dec 56), p. 25.

<sup>16</sup>Headquarters Continental Army Command, TO&E 57T ROTAD, Airborne Division, (Fort Monroe: Headquarters Continental Army Command, 10 Aug 56), p. 32.

<sup>17</sup>United States Army Aviation School, Division Aviation Organization Study, a study conducted by the Combat Developments Office, U. S. Army Aviation School (draft copy) (Fort Rucker: U. S. Army Aviation School 1957), Annex B. 1.

aviation section. As a general rule, missions were to be ". . . initiated and assigned directly by the commander of the parent or supported unit. Under special circumstances . . . higher headquarters may impose limitations . . . or prescribe certain missions to be accomplished. . . ." It is also provided that the aviation staff officer ". . . may, in the name of the commander, exercise operational control of all organic aviation units which have not been assigned or attached to subordinate units within the command."<sup>18</sup> While aviation could be controlled from the division operations center, this was to be the exception rather than the rule. Under normal conditions the commanders of parent units controlled aircraft which were providing support. However, it was necessary for the division aviation section to consider the plan and employment of the division force as a whole. This could be achieved by "monitoring the employment of aviation within the command and integrating aviation efforts where applicable for more effective utilization."<sup>19</sup> The staff duties of the section included, to list a few, (1) supervising training procedures in navigation communication and safety, (2) advising the commander and staff on aviation matters, (3) conducting unit schools. Although other duties were listed, the above examples are typical of the depth and type of its responsibilities.

The aviation section's responsibilities were not limited to the area of flight operations. It was also responsible for "standardizing unit operational and organizational maintenance procedures for new aircraft

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<sup>18</sup>Training Text 7-100-2, p. 21.

<sup>19</sup>Ibid., p. 22.

and equipment as established by heads of technical services. . . ."<sup>20</sup> Routine maintenance inspections, maintenance quality control programs, and continued maintenance supervision were not among the duties of the section. Maintenance coordination was effected when necessary by augmenting the aviation special staff with maintenance personnel who were assigned to supporting maintenance units.

### Operations

#### Forward Area Support

Aircraft and personnel which normally supported the combat elements of the division were grouped into the direct support platoon which operated in the division forward area. The direct support platoon consisted of five combat support flights, an artillery flight, a target acquisition flight, and a platoon headquarters for a total of twenty-one aircraft. Each flight, with its assigned aircraft, operated independently except when necessary to supplement an adjacent flight with aircraft and personnel.<sup>21</sup>

The artillery flight, of the direct support platoon, provided support for division artillery by flying observation, reconnaissance, fire adjustment, and surveillance missions. In the ATFA concept artillery battalions were physically located at or near one of the committed combat commands which permitted one flight group to support both units. However, the ROCID concept called for more dispersion on the battlefield

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<sup>20</sup>Ibid.

<sup>21</sup>Training Text 1-100-1, p. 14.

and, therefore, supporting artillery units were normally separated from supported elements by a considerable distance. Consequently, designated aircraft were placed solely in support of artillery battalions.

The target acquisition section flew reconnaissance and counter-reconnaissance missions in support of the division armored cavalry battalion.<sup>22</sup>

Whenever aircraft augmentation or adjustments were required, the direct support platoon commander was responsible for reallocating aircraft within his resources to designated sections or flights within his platoon. If he did not have the required aircraft he made his needs known to the company commander who in turn provided aircraft from the general support platoon, which was organized and equipped to provide this service.

When practicable flights and elements of the direct support platoon operated from the main division airfield. However, it was often impractical for the aircraft to operate from the main airfield because it was frequently many miles to the rear of combat elements. When this situation existed, forward landing strips were prepared in the immediate area of the regiment, artillery battalion, or armored cavalry battalion.<sup>23</sup>

#### Rear Area Support

The general support platoon, referred to as the rear echelon, normally operated in the division rear. A total of twenty-nine aircraft were assigned to the platoon. The command support section provided transportation for the commander and his staff; aircraft could be withdrawn from

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<sup>22</sup>Ibid., p. 14.

<sup>23</sup>Ibid.

this section for an on-call emergency mission to be flown in support of other units. The tactical support section, which was assigned 15 two-place helicopters, provided aircraft which were used to augment, when necessary, the direct support platoon. Utility aircraft in the utility section were used for carrying supplies, to supplement aeromedical air transportation, etc.<sup>24</sup>

#### Operations Center

The aviation company operations center was the nerve center of the company. A change in the composition of land maneuver elements or a change in the mission of maneuver elements normally required a reallocation of aircraft. For example, if one of the regiments which had been employed against the enemy on the line of contact was relieved by the reserve regiment a change in allocation of aviation was required. Reserve elements had a relatively small requirement for aircraft until they were committed to action.

Flight commanders who were also serving as aviation officers on the combat commander's staff submitted request for additional aircraft to the operations center. The company commander made the necessary reallocation if the requirements were within his resources. If the requirements exceeded the resources, the division aviation staff officer, after coordination with the G-3 and other staff officers, established priorities and allocated aircraft accordingly.<sup>25</sup>

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<sup>24</sup>Training Text 7-100-2, p. 19.

<sup>25</sup>Training Text 1-100-1, pp. 12 and 21.

### Maintenance

Crew chiefs performed first echelon aircraft maintenance. The aircraft maintenance section, organic to the service platoon, performed second echelon organizational maintenance and limited field maintenance. The amount of organizational maintenance to be performed was to be limited "... only by personnel, available tools, parts supply, and time available."<sup>27</sup> An organizational maintenance team was formed to accompany the aircraft whenever flights or sections operated forward for extensive periods in support of combat elements.<sup>28</sup> The transportation army aircraft maintenance company provided assistance in third echelon maintenance which included evacuation and repair.

### Summary

Operations and maintenance in the ROCID, ROCAD and ROTAD test divisions were centralized when compared to the organization of aviation in standard divisions not participating in the test. However, the ROCID organization was decentralized when compared to that in the ATFA divisions.

The ROCID concept was intended to permit decentralized operations but also to provide centralized maintenance, supply, and administration. It was a completely new concept; unless understood it would also appear to be paradoxial. The aviation company commander was responsible for effectiveness of his personnel and equipment although he was required to

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<sup>27</sup>Training Text 1-100-1, p. 106.

<sup>28</sup>Training Text 7-100-2, p. 80.

relinquish operational control to the unit commanders who were being supported. This concept was not new to other division elements, such as signal and engineers, as they had long provided this type service for combat units.

It was intended that major combat elements be provided an adequate number of aircraft to support their operations. In addition, the same pilots would fly in support of a given unit whenever possible. Without exception, the pilots in the artillery flight flew in support of field artillery.

The division aviation staff officer served primarily as an adviser to the division commander and staff; he performed normal duties expected of a special staff officer. He and the aviation company operations center entered into the scene of operational control only where aircraft had to be reallocated or augmented.

Ostensibly, the largest benefit gained by pooling all aircraft in one divisional unit was the efficiency gained in the areas of maintenance, supply, and administration. Imbalances of qualified and experienced maintenance personnel were avoided since all were in the same unit; this was not always true where they were dispersed throughout the division operating under the decentralized and then standard concept. Efficient procurement and distribution of supplies was possible since all efforts were centralized. Personnel could be equitably distributed as necessary.

## CHAPTER III

### REORGANIZATION IMPLEMENTED

In the years 1954 to 1957, the Army's full attention on matters pertaining to division aviation was focused on the tests reviewed in the preceding chapter. Consequently, during this period we find: (1) no change in organization, (2) the number of aircraft authorized in each division remained unchanged, (3) Field Manual 20-100, the only manual which pertained to aviation doctrine, remained unchanged.

The purpose of this chapter is to chronologically review significant events in division aviation from 1957 to 1962. During this period, the Army published several manuals designed to formulate and solidify aviation doctrine. Provisions of these manuals pertaining to operations and maintenance at division level will be examined.

#### 1957-1958

Plans for reorganization of the divisions were implemented in 1957. Divisions reorganized, as directed by the Department of the Army, according to draft tables of organization and equipment which were closely patterned after the ROCID, ROCAD, and ROTAD test documents. The total number of aircraft in each new division remained approximately the same

as in the test divisions. For example, the aircraft authorization in the infantry division was reduced by one to a total of forty-nine.<sup>1</sup>

In 1958, the Department of the Army published in the form of field manuals some of the training texts used during the tests. A drift toward decentralized operations was indicated by the following stipulations:

- (1) the artillery flight provided sorties for division artillery, (2) the target acquisition section provided surveillance sorties for the cavalry squadron (the armored cavalry battalion had been redesignated cavalry squadron), (3) the same combat support flight habitually supported a given battle group<sup>2</sup> (the infantry regiment had been redesignated battle group).

Draft tables of organization and equipment for the aviation companies reflected additional reconnaissance capabilities within the division. In order to effectively and efficiently utilize these new capabilities an entirely new platoon, the aerial surveillance platoon, was formed as shown in figure 5.<sup>3</sup>

Operations within the general support platoon were further decentralized with the issuance of the draft table of organization and equipment. As shown in figure 5, the tactical support function was now divided into two sections: the forward tactical support section and the rearward

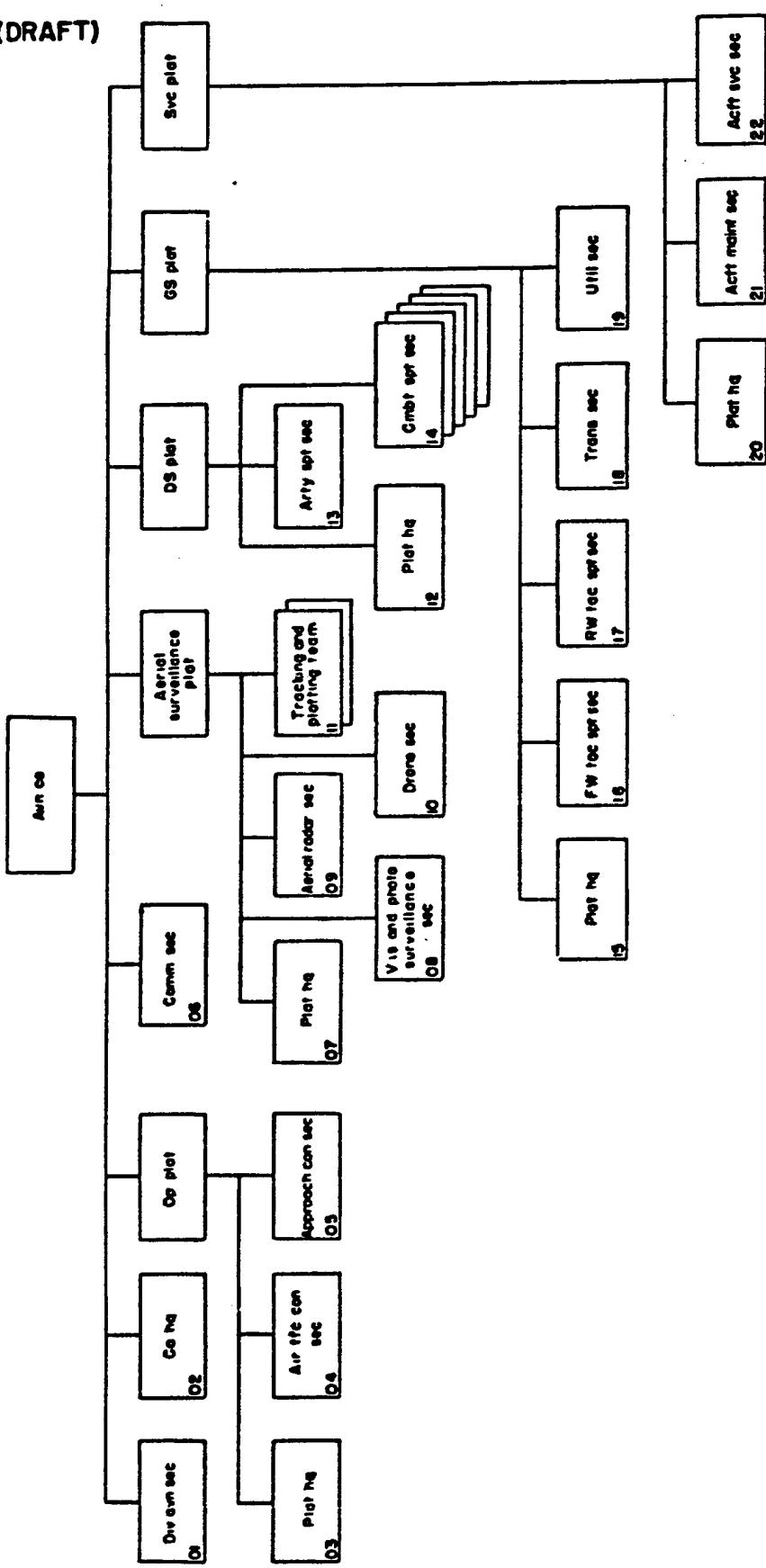
<sup>1</sup>Headquarters U. S. Continental Army Command, TO&E 1-17D (Draft), Infantry Division Aviation Company, (Fort Monroe: Headquarters U. S. Continental Army Command, undated).

<sup>2</sup>U. S. Department of the Army, Field Manual 7-100, Infantry Division, (Washington: U. S. Government Printing Office, 3 Oct 58), p. 17.

<sup>3</sup>Headquarters U. S. Continental Command, TO&E 1-7D (Draft), Infantry Division Aviation Company, (Fort Monroe: Headquarters, U. S. Continental Army Command, undated), p. 2.

# INFANTRY DIVISION AVIATION COMPANY

## TOE I-7D (DRAFT)



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Figure 1 • TOE I-7D (Draft) Organization Chart - Infantry Division Aviation Company

tactical support section. The forward tactical support section was normally used to augment and support the combat support sections, and the rearward tactical support section was used to augment the general support platoon.

Field Manual 7-100, Infantry Division, published in October 1958, and Field Manual 17-100, the Armored Division and Combat Command, published in May 1958, were apparently distributed prior to the publication of the draft tables of organization and equipment. Consequently, the new manuals did not reflect the changes in organization shown above until 1960, when Field Manual 7-100 was changed; this change coincided with the approved table of organization and equipment published by the Department of the Army in 1960.

Field Manual 6-20, Field Artillery Tactics and Techniques, habitually contained doctrine for employment of aircraft organic to field artillery within the division. However, the publication of 1958, which provided the doctrine for field artillery in the new reorganized division, for the first time reflected the change in concept to centralized operations as follows:

The artillery flight of the division aviation company operates in direct support of or attached to the division artillery. It normally functions under the operational control of the division artillery commander or a subordinate unit commander within the division artillery. Decentralization of operational control to subordinate artillery units may be necessary in order to insure close support and maximum utilization of aircraft. . . . Every effort is made to have supporting aircraft operate from airstrips in close proximity to supported artillery unit.<sup>4</sup>

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<sup>4</sup>U. S. Department of the Army, Field Manual 6-20, Field Artillery Tactics and Techniques, (Washington: U. S. Government Printing Office, 10 Dec 58), p. 65.

Conspicuously absent in 1958 was the publication of a manual to provide the overall doctrine for the aviation company. As an interim measure, provisions of Training Text 1-100-1 were applied in the newly reorganized divisions until the publication of Field Manual 1-100 in 1959.

Great efforts were made in 1958 to solidify aviation doctrine within the divisions as the reorganization plans were put into effect. However, there is evidence that these efforts were not completely effective. Field manuals, although published and available to the divisions, did not provide doctrine or guidance for the employment of all functions in the new tables of organization and equipment. Although conjectural, it may be supposed each division formulated policy for the utilization of the aerial surveillance platoon and the operations platoon.

### 1959

#### Operations

Although additional manuals pertaining to the division were published, they had little effect on aviation organization and doctrine. Field Manual 1-100, Army Aviation, was published in April 1959 which superseded Field Manual 20-100. The manual provided generalities pertaining to Army aviation doctrine but contributed very little to the operational organization and doctrine of division aviation. Most of the contents were common to all subjects of Army aviation. An exception was a change in the area of maintenance as will later be seen.

Field Manual 1-5, Army Aviation Organizations and Employment, was published almost simultaneously with Field Manual 1-100. Each type of aviation unit within the entire Army was described in detail, including a

separate chapter for each of the aviation companies within the infantry, armored and airborne division. In reality, the manual was obsolete in some areas when published; an example was the portrayal of the test infantry division table of organization and equipment as the then current document. Consequently, no reference was made to the employment of the newly formed aerial surveillance platoon and the operations platoon.<sup>5</sup>

#### Maintenance

Significant events effecting division aviation in 1959 were in the maintenance area. The categories and echelons of maintenance in 1959 were: organizational maintenance, first and second echelon; field maintenance, third and fourth echelon; depot maintenance, fifth echelon.<sup>6</sup> Prior to early 1959 only organizational maintenance and limited third echelon maintenance was performed by divisional units; third echelon maintenance was performed by a non-organic transportation army aircraft maintenance unit as was earlier discussed.

Field Manual 1-100 indicated a change in the above procedures by stating the following:

Transportation Corps aircraft maintenance units provide third echelon direct support for all Army Aviation activities which are located in

<sup>5</sup>U. S. Department of the Army, Field Manual 1-5, Army Aviation Organization and Employment, (Washington: U. S. Government Printing Office, 29 May 59), pp. 10-3 through 10-16.

<sup>6</sup>U. S. Department of the Army, Army Regulation 750-5, Maintenance of Supplies and Equipment, (Washington: U. S. Government Printing Office, 21 Feb 51), pp. 3-4.

the Corps and Army service area. Direct support third echelon field maintenance for all divisional aircraft is provided by a Transportation Corps aircraft maintenance unit organic to each division.<sup>7</sup> (Italics mine.)

Subsequently, an organic maintenance detachment was authorized in each division to perform third echelon maintenance. The detachment was organic to the infantry division transportation battalion or the armored division trains as appropriate.<sup>8</sup> It was normally located adjacent to the aviation company for mess, and dependent on the division administration company for administrative matters. Third echelon maintenance was normally performed at the division airfield, although teams were sent forward as required to perform specific tasks. Maintenance beyond the capability of the detachment was performed by a transportation aircraft direct support company located in the field army service area.<sup>9</sup> Aircraft were flown to the location of the direct support company if feasible.

The purposes of aircraft maintenance inspections were to "develop teamwork between using organizations and supporting transportation maintenance units," and to, "evaluate relative efficiency of organizational maintenance in units of the command."<sup>10</sup> Unfortunately, there were no clear lines of aircraft maintenance responsibility within the division; no officer, short of

<sup>7</sup>U. S. Department of the Army, Field Manual 1-100, Army Aviation, (Washington: U. S. Government Printing Office, 3 April 1959), p. 203.

<sup>8</sup>Headquarters U. S. Continental Army Command, TO&E 55-79 (Draft), Aircraft Maintenance Detachment Infantry Division Transportation Battalion or Armored Division Transportation Aircraft Maintenance Detachment, (Fort Monroe: Headquarters Continental Army Command, undated).

<sup>9</sup>U. S. Department of the Army, TO&E 55-457 D, Transportation Aircraft Direct Support Company, (Washington: U. S. Government Printing Office, 16 May 60), p. 1.

<sup>10</sup>Field Manual 1-100, p. 205.

the division commander, had operational or technical control over the division wide aircraft maintenance effort which would insure "teamwork between using organizations and supporting transportation aircraft maintenance units." The Staff Officer's Field Manual, Field Manual 101-5, made a generalization to the effect that the transportation officer supervised the "recovery, evacuation, maintenance, and reclamation of transportation corps material to include Army aircraft beyond the capabilities of using agencies."<sup>11</sup> (Italics mine) Responsibility for maintenance was not identified with the division staff since staff duties of the aviation section pertaining to maintenance were limited to, "insuring compliance with standardized operational and maintenance procedures for new aircraft and equipment as established by heads of services, in accordance with AR 750-5."<sup>12</sup> The situation was partially clarified in the armored division by the publication of Field Manual 17-50. It stipulated that the technical supervision of the maintenance detachment was under the division transportation officer, and that technical supervision of aircraft maintenance was a responsibility of the transportation officer.

Two units were performing aircraft maintenance and, consequently, two sets of standards, two levels of quality control, and maintenance scheduling problems could have resulted. Each division was left to sort out the problem. An answer adopted by some divisions was to place the

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<sup>11</sup>U. S. Department of the Army, Field Manual 101-5, Staff Officer's Field Manual, Staff Organization and Procedures, (Washington: U. S. Government Printing Office, 18 Nov 54), p. 38.

<sup>12</sup>Field Manual 1-100, p. 9.

aircraft transportation detachment under the operational control of the aviation company commander.<sup>13</sup> This arrangement was perhaps the first time the entire aircraft maintenance effort (first, second, and third echelon) within the division area was consolidated and placed under the operational control of one officer.

A transportation aircraft direct support company, which was organic to a field army or independent corps, provided back up third echelon maintenance for the divisions. The primary mission of the company was to provide direct third echelon maintenance to non-divisional aircraft units in the corps or army area as applicable.

#### 1960-1961

A new staff officer manual, Field Manual 101-5, was published in July 1960. Duties of the division transportation officer pertaining to aircraft maintenance were no more specific than in the previous manual. Similarly, the aviation officer's duties remained unchanged.<sup>14</sup>

A revised Field Manual 7-100, Infantry Division, was published in November. The new capabilities of the aviation company were listed as well as a description of the changes in organization indicated in the table of organization and equipment. The forward support section and the

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<sup>13</sup>Interviews with Major Kenneth J. Calcaterra, faculty, USACGSC and Captain Roger H. Boehnke, student, USACGSC, 3 Feb 65.

<sup>14</sup>U. S. Department of the Army, Field Manual 101-5, Staff Officers Field Manual, Staff Organization and Procedure, (Washington: U. S. Government Printing Office, 19 Jul 60), pp. 33-41.

rearward support section in the general support platoon were now changed to the fixed wing tactical support and the rotary wing tactical support section as shown in figure 6-15. The aircraft were so grouped for maintenance and operational purposes. Changes listed above were the only significant ones pertaining to aviation. Figure 7-16 shows the position of the transportation aircraft maintenance department in the division structure. The manual acknowledged that the detachment performed third echelon aircraft maintenance but went no further to explain command relationship or staff responsibilities.

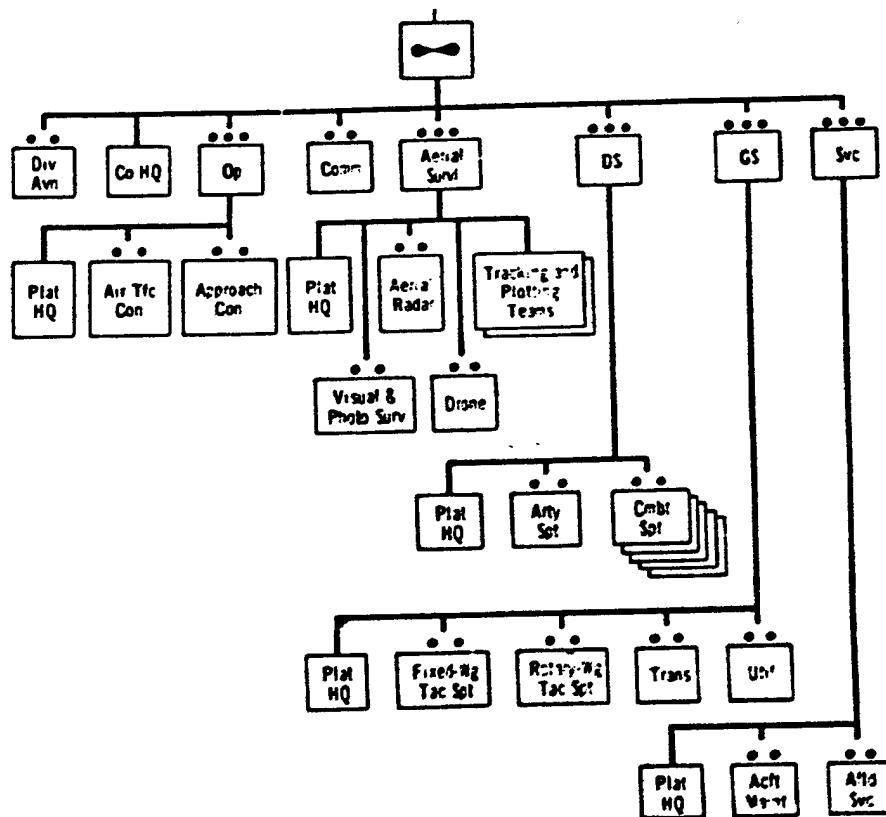


Figure 7. RCTL current aviation structure

U. S. Department of the Army, Field Manual 7-10, Infantry Division, (Washington: U. S. Government Printing Office, 15 Nov 44), p. 45.

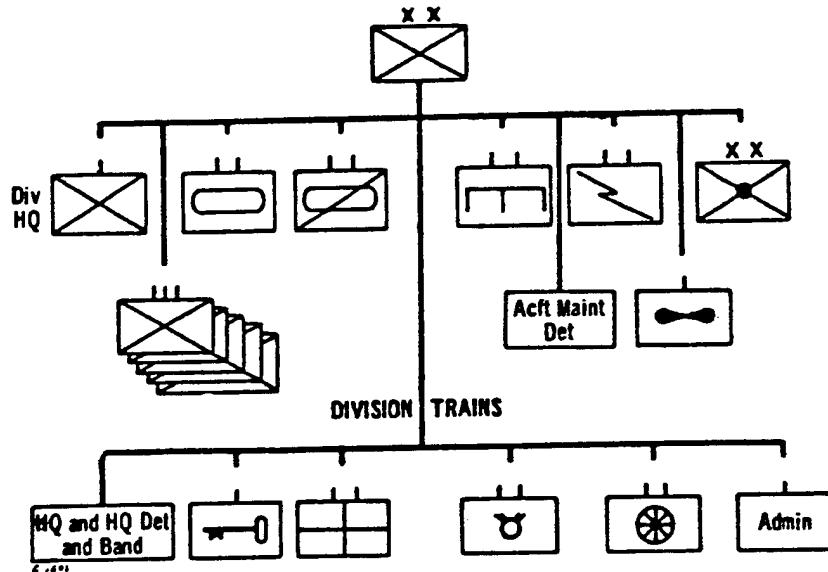


Figure 7. Aircraft Maintenance Detachment

Field Manual 1-10, Army Aviation Organizational Aircraft Maintenance and Supply, was the first field manual published applicable to aircraft organizational maintenance. However, it failed to provide specific information pertaining to coordination between the divisional aircraft organizational maintenance and the transportation aircraft maintenance detachment. The only pertinent guidance given was, "field maintenance installations detachments will coordinate their functions and organizational maintenance units to effect a smooth well-organized maintenance operation."<sup>17</sup>

No additional changes occurred which were applicable and significant to division aviation until 1962 when divisions were again reorganized.

<sup>17</sup>U. S. Department of the Army, Field Manual 1-10, Army Aviation Organizational Aircraft Maintenance and Supply, (Washington: U. S. Government Printing Office, 17 Aug 60), p. 2-4.

Summary

The division aviation staff officer and the company commander should have had little difficulty in developing and maintaining an effective training program. With all pilots and observers assigned to one unit, it was easy to establish: (1) effective ground and flying training programs, (2) effective and rigid flying standardization criteria, and (3) effective flight examination program to examine each pilot's capabilities and proficiency.

Having operational command of all pilots in the division enabled the aviation company commander and the division aviation section to efficiently and effectively utilize the pilots and aircraft. A shortage of aircraft or pilots in one part of the division could be alleviated by simply real-locating the aircraft within the company.

Combat element commanders were assured, with a good probability, of having the same pilots and aircraft support them. This was particularly true for field artillery support.

From an aircraft maintenance standpoint, the RCCID type division aviation company enjoyed the most favorable organization up to its time. Third echelon maintenance was for the first time organic to the division. This fact, in itself, was to the advantage of the aviation staff officer and the aviation company commander; they now had ready access to the commander of the field maintenance detachment which enabled them to resolve grievances and difficulties. According to several participants an ideal situation existed in those divisions where decisions were made to place the field maintenance detachment under the operational control of the company commander. A single set of standards, one level of quality control,

one maintenance training program, and ease of maintenance scheduling were the desirable benefits achievable under this arrangement. Mechanics possessing critical skills could be better utilized in a single organization. Maintenance supervisors and personnel scheduling maintenance could effectively utilize them by insuring they were working on high priority maintenance jobs and holding lag time to a minimum.

Aircraft parts and supplies could be better managed whenever a shortage existed. It is much easier to control critical items of supply when all aircraft are in one organization versus several organizations. Actual or potential shortage of parts could be detected earlier when one agency was responsible for inventory control.

## CHAPTER IV

### REORGANIZATION OBJECTIVE ARMY DIVISION

The purpose of this chapter is to review current divisional organization with emphasis on the following: (1) the mission and concept of operation in the current division, (2) organization of aviation, (3) mission and capabilities of each aviation element. No attempt will be made to analyze or appraise the current organization until Chapter VI.

To appreciate the current division organization, it is necessary to review significant background events leading to the adoption of present concepts. The ROCID, ROCAD, and ROTAD divisions were organized primarily to fight in a nuclear environment. However, there was a growing feeling within the Department of Defense and the Army that divisions should be able to engage successfully in combat during either nuclear or conventional war. By late 1960 studies were being conducted to determine what changes in organization were required to meet this criteria. Studies continued into 1961 when the proposed organization was identified as Reorganization Objective Army Division (ROAD). The objectives of ROAD were described in a special message sent to Congress by the President on 25 May 1961, which reads as follows:

. . . I am directing the Secretary of Defense to undertake a complete reorganization and modernization of the Army's divisional structure, to increase its nonnuclear firepower, to improve its tactical mobility in any environment, to insure its flexibility to meet any direct or

indirect threat, to facilitate its coordination with our major allies, and to provide modern mechanized divisions in Europe. . . .

. . . I am asking the Congress for an additional \$100 million to begin the procurement task necessary to re-equip this army structure with the most modern material. New helicopters, . . . must be obtained now.<sup>1</sup>

Divisions began to reorganize in 1962 conforming to draft tables of organization and equipment.<sup>2</sup> Subsequent minor changes were made to the drafts prior to the final publication in July 1963.

Four types of divisions currently in existence are designated as (1) infantry, (2) mechanized, (3) armored, (4) airborne. All divisions are similarly organized but vary in equipment as indicated by the designation. Approximately one half of the personnel are assigned to a relatively stable structure referred to as the division base, which consists of a fixed command, staff, combat support, and combat service support elements. The organization of the base is virtually the same in all four types of division. Divisions are tailored to fit environmental, mission, and other requirements by attaching an appropriate number of infantry, mechanized infantry, or armored battalions. The preponderance, of type battalions, therefore, determines the type of division.

The review of the ROAD division will be limited to the infantry division as all aviation organic to the division is in the base which is similarly organized and equipped in all types of divisions. All

<sup>1</sup>U. S. Army Command and General Staff College, Reorganization and Modernization of Army Divisions, information letter distributed in the College, (Fort Leavenworth: U. S. Army Command and General Staff College, 29 May 61), p. 1.

<sup>2</sup>Draft TO&E 7-E, Infantry Division, authorized 104 aircraft. The final authorization was reduced to 101 plus 2 additional when augmented.

comments pertaining to infantry division aviation concepts of operation and organizations will be applicable to the other type divisions unless specifically indicated.

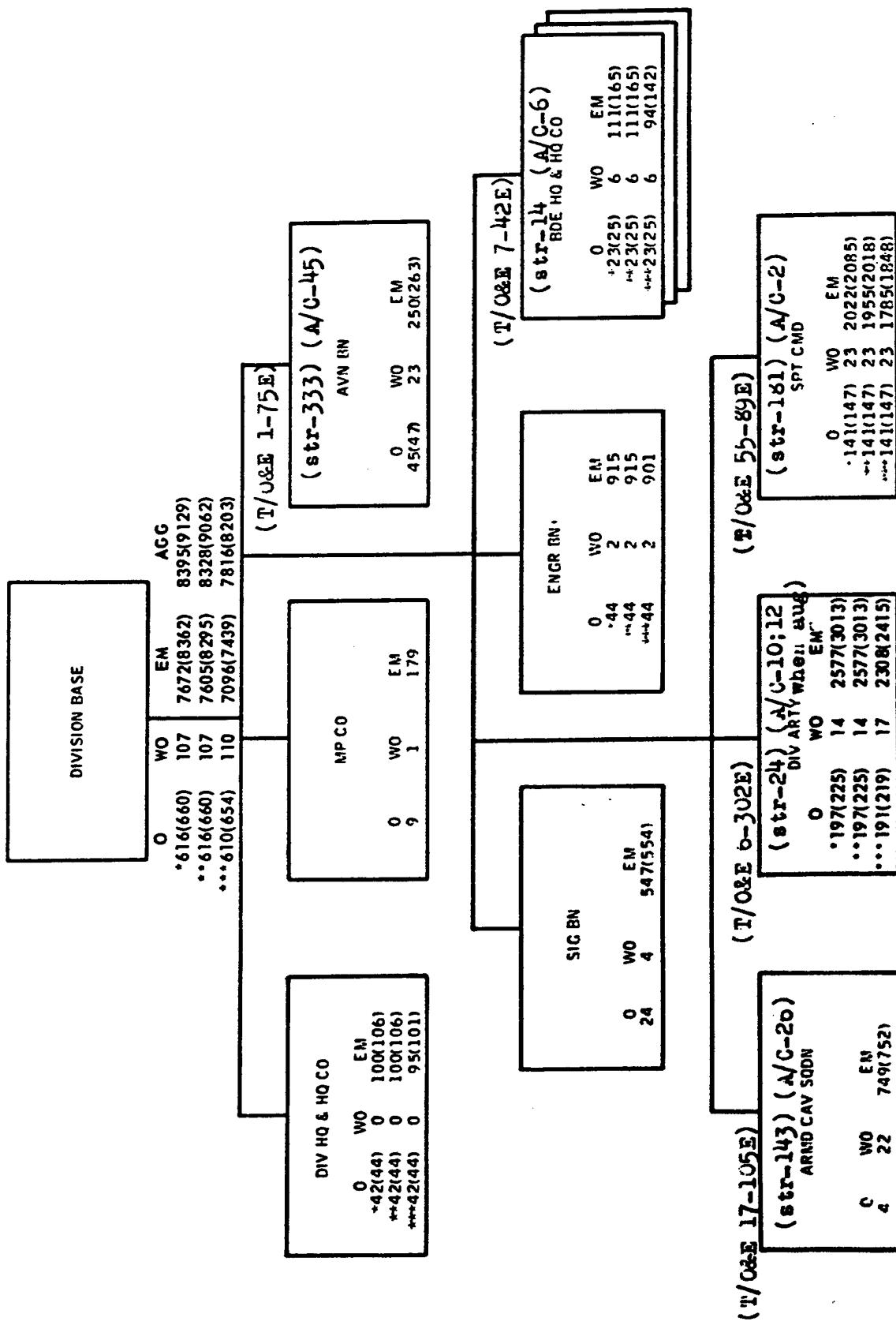
#### Aviation Employment

The conversion of divisions to the ROAD organization marked the end of centralized aviation. An objective of the current concept is to provide organic aircraft to units in the division which have a high and continuous requirement for aviation support. Therefore, seven units possess organic aircraft. A significantly larger number of personnel are employed in the aviation role; approximately 725 are associated with aircraft maintenance and operations in the ROAD division as compared to approximately 250 in the aviation company of the ROCID division.

The division base is organized as shown in figure 8.3 Units which possess organic aircraft are indicated by placing information pertaining to personnel strength and numbers of organic aircraft in parenthesis. Personnel strength figures represent personnel directly and indirectly associated with aviation; an example of the latter is in the armored cavalry squadron where infantry riflemen are assigned to the air troop. Authorization for aircraft within the infantry division was increased from 49 in the ROCID division to 103 in the ROAD division. Not only was the number of aircraft doubled, but each aircraft's capability is greater

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<sup>3</sup>U. S. Army Command and General Staff College, RB 61-1, Reference Book, The Division, (Fort Leavenworth: U. S. Army Command and General Staff College, 1 Aug 64), p. 3. Information in parenthesis was added to the organization chart by the author. Information was obtained from appropriate TO&Es as indicated.



\*Unit totals reflect basic TOE plus augmentation.  
\*\*Unit totals when organic to Armd Div.  
\*\*\*Unit totals when organic to Mech Div.

•Unit totals when organic to Inf Div.  
•Unit totals are for battalion when equipped with M416 or class 60 bridging--with MAB there are 5 less EM.  
Note. Parenthetical totals reflect basic TOE plus augmentation.

Figure 8. Division Base

as a result of modernization.

The move to decentralized operations is the result of two major considerations: (1) the mission and capability of aviation has been expanded which indicates a need for decentralized control, (2) the increased number of aircraft with improved capabilities permits decentralized utilization.

Economy of effort, while still emphasized, has been compromised to provide more responsiveness to the unit commander by placing the aircraft under his direct control.

#### Mission and Capabilities

The mission of Army Aviation is to augment the capability of the division to conduct prompt and sustained combat incident to operations on land. The capabilities of Army aviation are listed in Field Manual 1-100 as follows:

- (1) Provide a means of achieving greater mobility for supported forces by moving personnel and equipment with greater speed virtually unaffected by terrain obstacles.
- (2) Provide a means of rapidly shifting, redirecting or massing forces as necessary.
- (3) Provide a means for rapid and effective reconnaissance and surveillance of large areas, target acquisition, and observation.
- (4) Deliver aerial fire support.
- (5) Provide airlift for movement of patients.
- (6) Provide an expeditious means for commanders to exercise control by personal contact, liaison, and augmentation of communications.
- (7) Operate under marginal weather conditions.<sup>5</sup>

Items (1) and (3) are significant additions to the capabilities of division aviation. Aviation unit capabilities listed above will be discussed later in detail.

<sup>4</sup>U. S. Department of the Army, Field Manual 1-100, Army Aviation, (Washington: U. S. Government Printing Office, 5 Jun 63), p. 4.

<sup>5</sup>Ibid.

Aviation Special Staff

The aviation special staff is assigned to the aviation battalion but performs most of its duties in the division tactical operations center, (DTOC). The division aviation officer who serves a dual role as the aviation battalion commander and the division aviation officer is, however, obligated to perform duties in several locations. The assistant division aviation officer's primary duty is as a division special staff officer who operates the army aviation element, (AAE), one of several elements in the DTOC.<sup>6</sup>

## Division Aviation Officer

The division aviation officer in the ROAD division has responsibilities equal to those of his predecessor in the ROCID division. However, the ROAD organization makes it much more difficult to carry out these responsibilities. First, he is not physically located near the aviation commanders as he was in the ROCID division. Second, he now must coordinate with and supervise seven aviation commanders instead of one.

The division aviation officer is both division special staff officer and battalion commander. Three other special staff officers fall into this category; they are the division artillery commander, engineer battalion commander, and signal battalion commander. However, there is a major difference in the command responsibility and authority given to the aviation officer when compared to the other three officers: the division artillery officer, and the engineer control all of the personnel and

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<sup>6</sup>U. S. Army Aviation School, Common Subjects for Army Aviation in the Field Army, (Fort Rucker: U. S. Army Aviation School, January 1964), p. 57.

equipment in the division employed in the applicable functional area. Although some signal personnel and equipment are organic to divisional units, the bulk is in the signal battalion. Terminal teams of the signal battalion provide communications support to units in the division including the brigades and the support command.

The following example is used to illustrate this point. Normally, one of the five artillery battalions is placed in direct support of a brigade when it is committed to action. Direct support is "a mission requiring a force to support another specific force and authorizing it to answer directly the supported force's request for assistance."<sup>7</sup> The division artillery officer (commander) is still responsible for training, administrative and logistical matters. He maintains command of his units although they are placed in direct support of a unit.

The division engineer officer (battalion commander) operates under a similar procedure. Any one or more of his companies may be placed in direct support of any one of the committed brigades.

Operating under similar procedures the signal officer and his battalion has certain sub-units in the battalion which normally support the same combat unit. An example is where a given forward terminal team habitually supports one of the brigades. However, the signal commander still has all of the responsibilities of training and administration. He, like the two previously discussed commanders, may shift material and personnel from one unit to the next as long as he provides a force capable of providing the required support.

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<sup>7</sup>U. S. Department of the Army, Army Regulation 320-5, Dictionary of United States Army Terms, (Washington: U. S. Government Printing Office, 28 Feb 63), p. 135.

The aviation officer has many of the responsibilities that the other staff officers have, but does not have a comparable degree of authority. The list of his division-wide responsibilities is formidable; it includes,

- (1) Supervising flight proficiency and aviation tactics training.
- (2) Establishing technical training programs and conducting unit schools.
- (3) Coordinating qualification and procurement of personnel.
- (4) Monitoring the employment of aviation within the command and integrating aviation effort.<sup>8</sup>

But he is limited by the fact that his command is confined to the aviation battalion which consists of approximately one half of the aviation personnel and aircraft in the division. The remaining personnel and aircraft are under the direct command and control of the units to which they are assigned. A detailed appraisal of this concept will be made in the following chapters.

#### Army Aviation Element

Although the present organization is designed to provide organic aircraft in adequate numbers to those units which have a continuing need for aviation support, any one or more of these units may require additional support because of added requirements, combat losses, etc. There is the possibility that, due to unforeseen circumstances, it may be necessary to place most or all of the aircraft under the direct control of the division aviation officers. For example, emergency resupply for a ground unit could require the use of all aircraft in the division. The aviation officer would, in coordination with the general staff, establish a

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<sup>8</sup>Common Subjects for Army Aviation, p. 23.

priority and allocate aircraft accordingly. The AAE is the operations center which coordinates aviation requirements.<sup>9</sup> The recommended lay-out of the division tactical operations center is shown in figure 9.<sup>10</sup> It should be noted that the AAE is located where it can easily coordinate with other staff elements.

The AAE is ideally suited to provide the required means of control of aviation to be exerted by the staff as rapid communications are available to all aviation sections and units within the division. Units which require aircraft replacement or reinforcement submit requests to the AAE; the same procedure applies to units not possessing aircraft. The AAE in coordination with other staff elements determines a priority, if required, and allocates the aircraft.

#### AVIATION BATTALION

The division aviation battalion is similarly organized in all type divisions as shown in figure 10,<sup>11</sup> with the exception that the airborne battalion does not have a drone section or an operations center. Battalions may be augmented by a pathfinder detachment.<sup>12</sup>

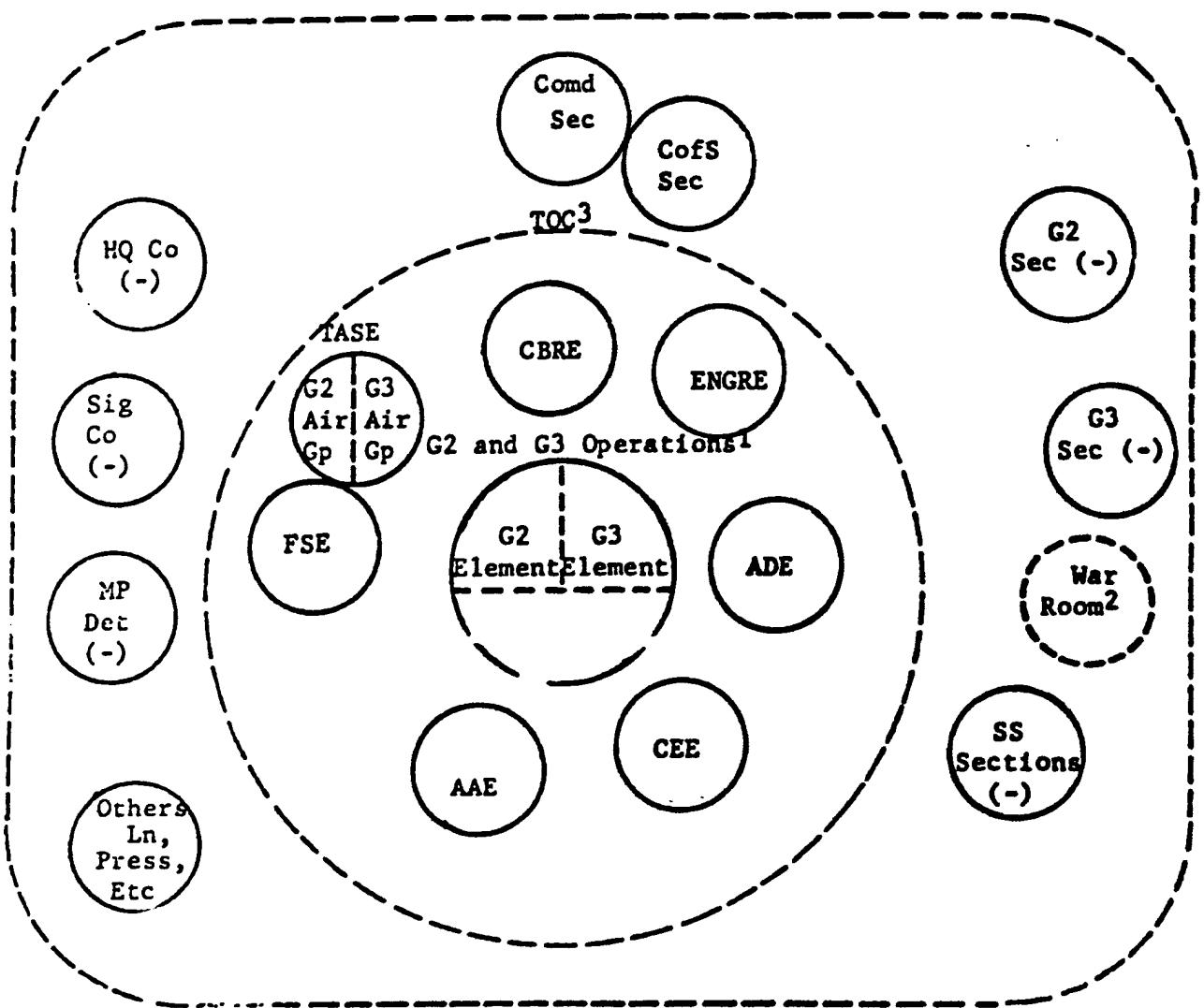
<sup>9</sup>. U. S. Continental Army Command, Training Text 101-2-1, Division Tactical Operations Center, (Fort Monroe: U. S. Continental Army Command, July 1960), p. 1.

<sup>10</sup>Ibid., p. 10.

<sup>11</sup>U. S. Army Aviation School, Common Subjects for Army Aviation in the Field Army, an instructional packet, (Fort Rucker: U. S. Army Aviation School, January 1964), p. 51. Information in parenthesis added by the author.

<sup>12</sup>U. S. Department of the Army, Field Manual 1-15, Aviation Battalion Infantry, Airborne, Mechanized and Armored Divisions, (Washington: U. S. Government Printing Office, 13 Dec 61), p. 3-1.

## THE DIVISION COMMAND POST



NOTES: <sup>1</sup>G2 and G3 operations include G1, G4, and G5 representation when required.

<sup>2</sup>When established.

<sup>3</sup>All TOC elements communicate, as necessary and appropriate, with each other; other staff sections in the CP; other staff sections in other echelons of the headquarters; higher, lower, and adjacent headquarters, to include other Services, and particularly to counterpart TOC elements at those headquarters.

Figure 9. Relationship. TOC to other Command Post elements.

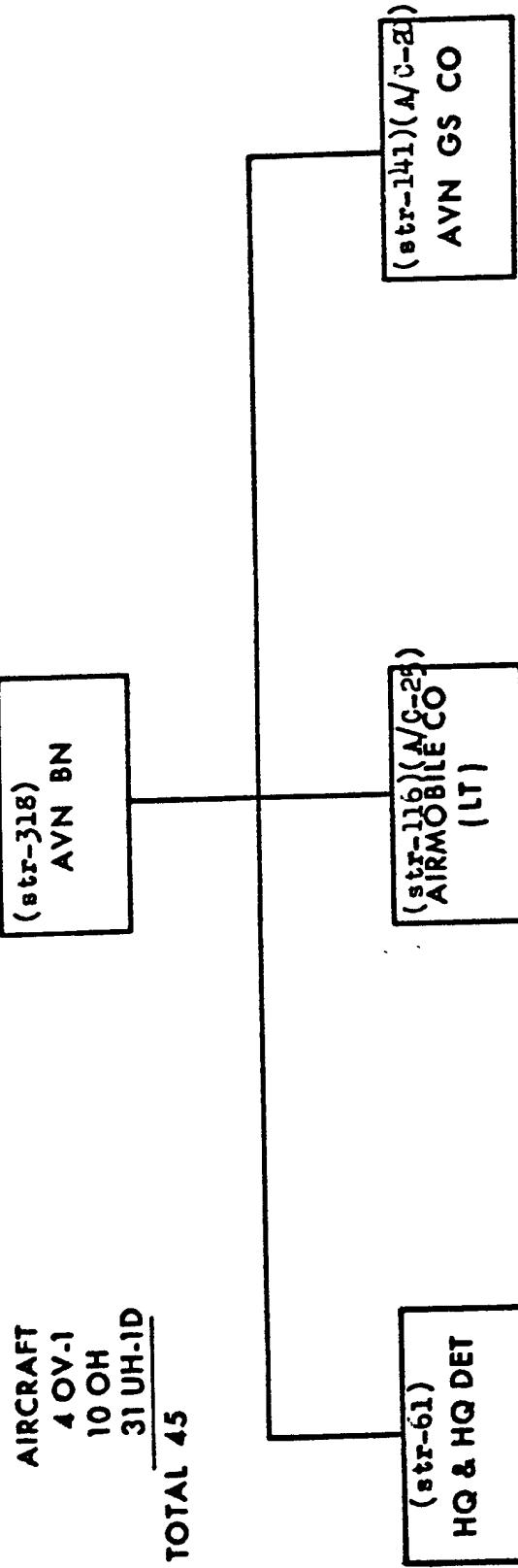


Figure 10. Aviation battalion in the infantry, airborne, mechanized, and armored divisions (TOE's 1-75E and 1-55E).

(Strength does not include augmentation)

The battalion is organized to perform the mission of providing ". . . aviation support for the division headquarters, division support command, and other divisional units without aircraft."<sup>13</sup> Additionally, it may provide support and augmentation of aircraft to units possessing organic aircraft.

#### Battalion Headquarters

The battalion headquarters is normally employed near or on the division airfield. The headquarters and headquarters detachment, figure 11,<sup>14</sup> provides the personnel and equipment for the command and control function of the battalion and for the operation of the division instrumented airfield.

The communications sections provides communications personnel and equipment required to operate a control tower, ground control approaches, communications to the aviation companies, etc. The maintenance section supervises battalion maintenance and supply. Maintenance supervisory capacity is limited to organizational maintenance performed throughout the battalion; direct support maintenance is performed by maintenance battalion personnel.<sup>15</sup>

#### Airmobile Company

The airmobile company normally operates from its own assembly area located near the division reserve. Organized as shown in figure 12<sup>16</sup> the

<sup>13</sup>Ibid., p. 1-1.

<sup>14</sup>Common Subjects for Army Aviation, p. 56.

<sup>15</sup>Field Manual 1-15, p. 4-15.

<sup>16</sup>Common Subjects for Army Aviation, p. 60.

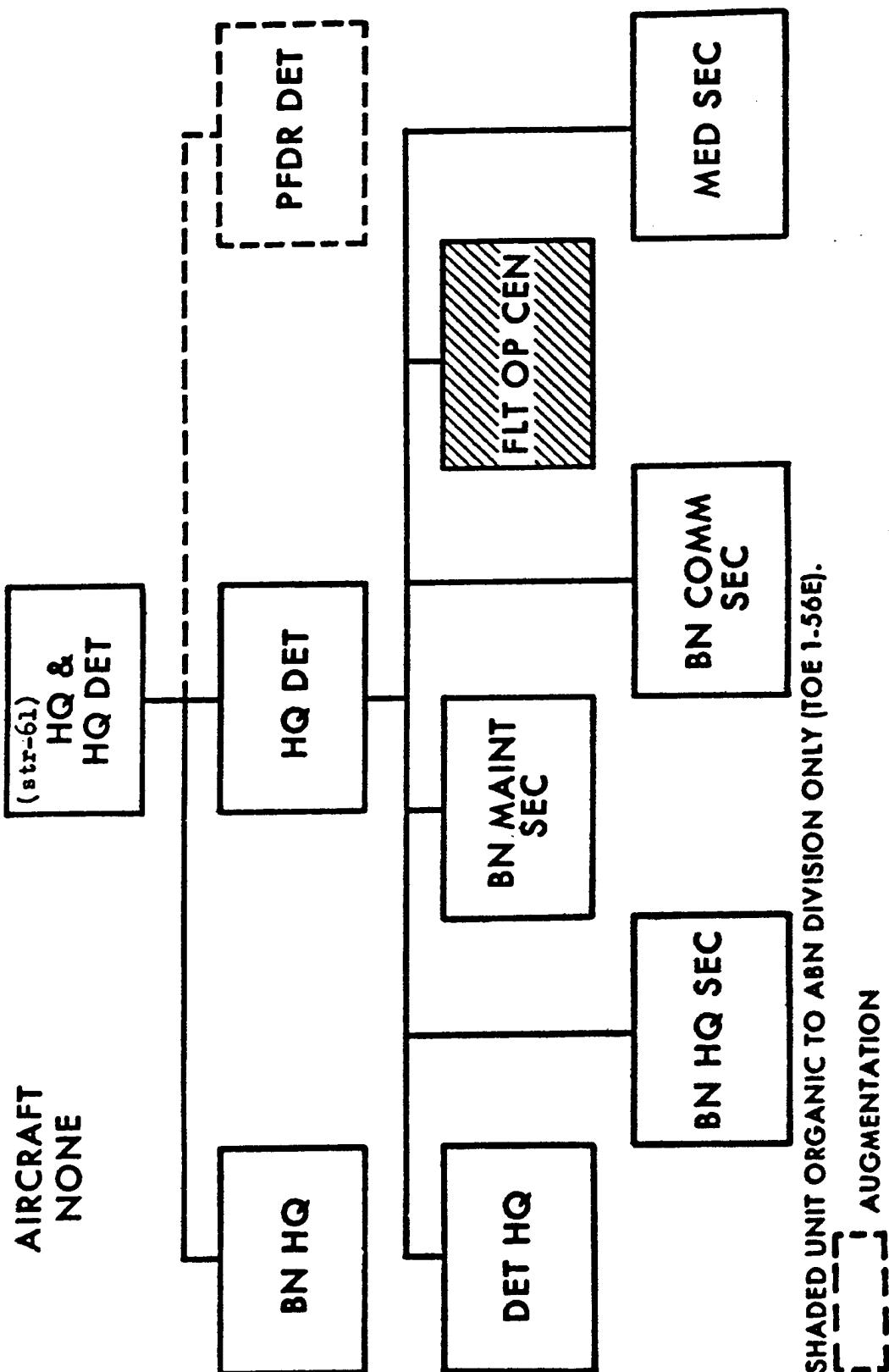


Figure 11. Headquarters and headquarters detachment, division aviation battalion  
(TOE's 1-76E and 1-56E).

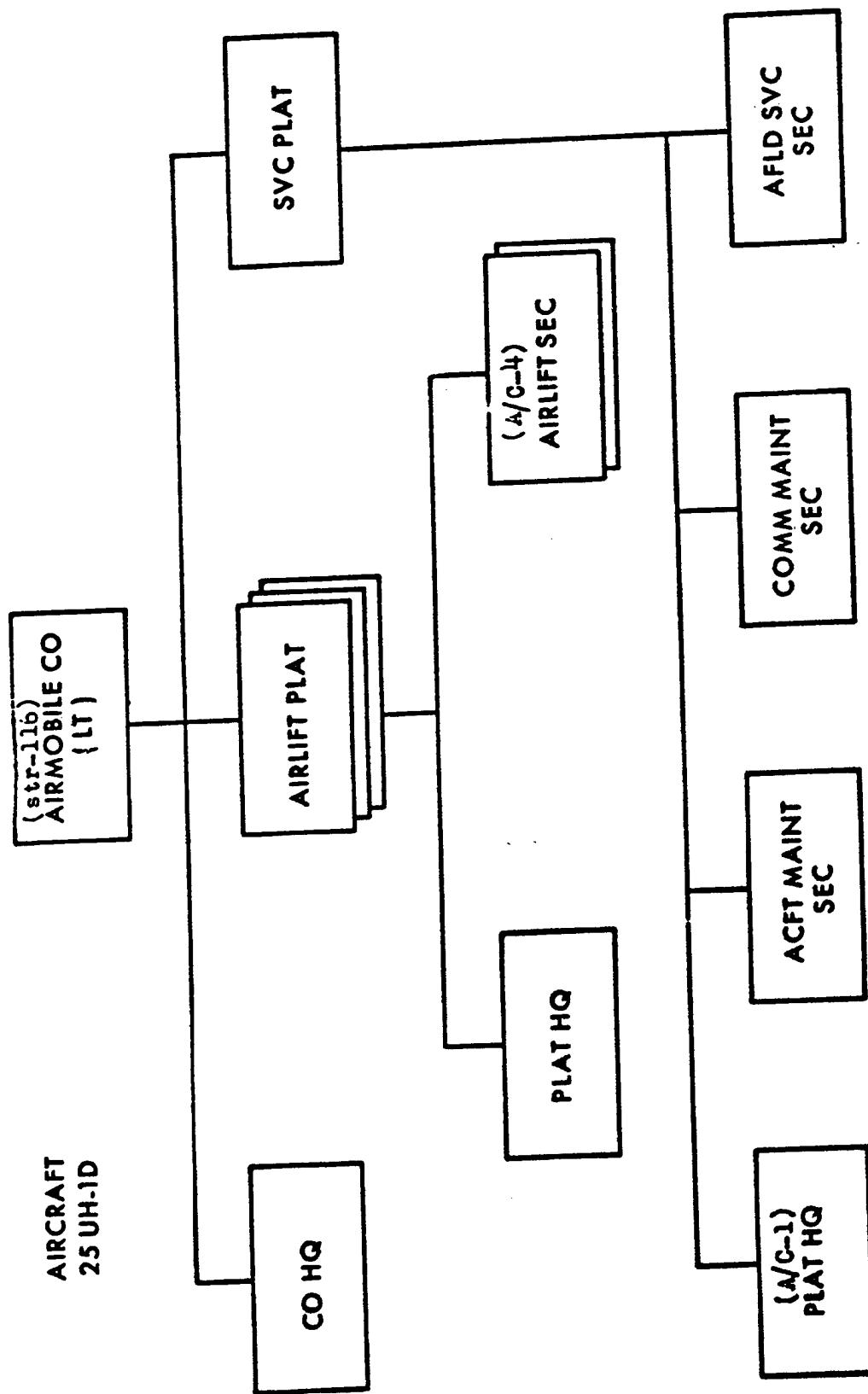


Figure 12. Airmobile company (light), division aviation battalion  
(TOE's 1-77E and 1-57E).

airmobile company is utilized as follows: (1) provides tactical movement of combat troops, (2) moves supplies and equipment, (3) supplements aerial firepower by carrying weapons kits. When at full aircraft strength the company can airlift one dismounted infantry company. While the ROCID aviation company had the capability to move a few troops, this is the first time division aviation has had the capability to move an entire company without using all aircraft in the division. It is unlikely that all aircraft are continually in a flyable condition; therefore, aircraft from the general support company, or another divisional unit reinforces the airmobile company as required.

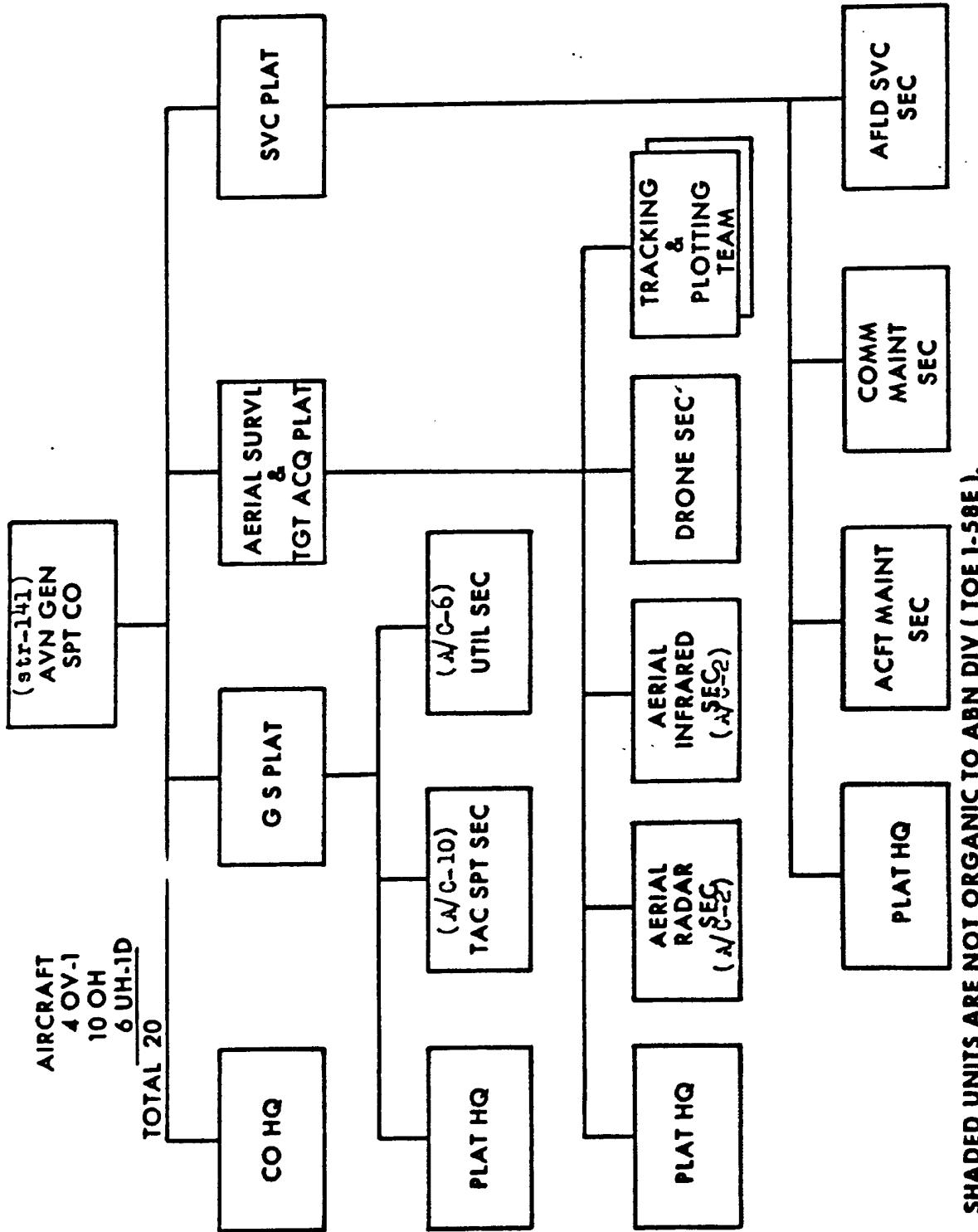
Aircraft and crew in the airmobile company may be used to reinforce an aviation unit whenever that unit has a priority higher than the current task being performed by the company. Aircraft are frequently used to provide support to units which have no organic aircraft; an example is laying wire for the signal battalion.

#### Aviation General Support Company

The organization of the general support company, as shown in figure 13,<sup>17</sup> is closely patterned after the ROCID aviation company with the exception that no direct support platoon is shown; that function is now in the organic aviation sections within the brigades and division artillery.

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<sup>17</sup>Ibid., p. 65.



**Figure 13.** Aviation general support company, division aviation battalion (TOE's 1-78E and 1-58E).

Designed to support the division headquarters and the division support command, the company also provides aviation support to those units not possessing aircraft. Requests for aviation support is submitted to the AAE; requirements are levied on the company by the AAE according to priority which is established by the division operation officer consistent with the overall situation.

All sixteen helicopters in the general support platoon may be armed with weapons kits to be used for ground fire suppression while conducting flight operations. Operations may include the following: (1) transportation for the commander and his staff, reconnaissance, air control of the land battle by the commander or staff, and communications; (2) reinforcing those units which possess aircraft; (3) supplementing aeromedical evacuation from the airfield; (4) transporting supplies and equipment.

The serial surveillance and target acquisition platoon performs virtually the same function as did its predecessor in the ROCID aviation company. Increased capability, because of modernization and added equipment, now provides day and night photography, aerial radar surveillance, infrared surveillance, and aerial radiological surveys.

The general support company normally operates at the division instrument airfield. This procedure facilitates organizational maintenance on the complex electronic equipment on aircraft such as the sidelooking radar and photographic equipment.

#### AIR CAVALRY TROOP

The air cavalry troop is one of four troops within the division armored cavalry squadron. Capabilities of the air troop are as follows:

- a. Conducting reconnaissance and security missions over large areas,

- including acquisition of nuclear targets and nuclear damage assessment.
- b. Conducting chemical and radiological monitoring and survey.
  - c. Conducting screening missions.
  - d. Acting as part of a covering force.
  - e. Providing security between ground tactical elements.
  - f. Performing rear area security.
  - g. Providing armed air escort for airmobile forces.
  - h. Seizing and dominating lightly defended areas or terrain features.<sup>18</sup>

Organized as shown in figure 14,<sup>19</sup> the air troop is normally employed in support of ground elements in the armored cavalry squadron. However, the entire troop or any segment of it may be attached or placed in support of other units in the division.

One of the primary missions of the troop is reconnaissance. The troop normally performs this mission in support of the squadron, but may be placed in direct support of another unit if justified. In the reconnaissance mission the aero-scout aircraft, which are equipped with machine guns and S-11 anti tank guns, can perform armed reconnaissance while gathering information. The aero-rifle elements can dismount to perform surface reconnaissance; each aircraft carries two fire teams of four men each. The aero-weapons platoon, with its aircraft equipped with rocket launchers, normally is held in a central location so that it may rapidly assist the aero-scout or aero-rifle elements.<sup>20</sup>

Other missions, such as rear area security or screening, may require the employment of the entire troop, or only one of the elements. The

<sup>18</sup>U. S. Department of the Army, Field Manual 17-36, Armored Cavalry Platoon and Troop, Air Cavalry Troop and Divisional Armored Cavalry Squadron, (Washington: U. S. Government Printing Office, 21 Dec 61), p. 125.

<sup>19</sup>Common Subjects for Army Aviation, p. 74.

<sup>20</sup>Field Manual 17-36, p. 156

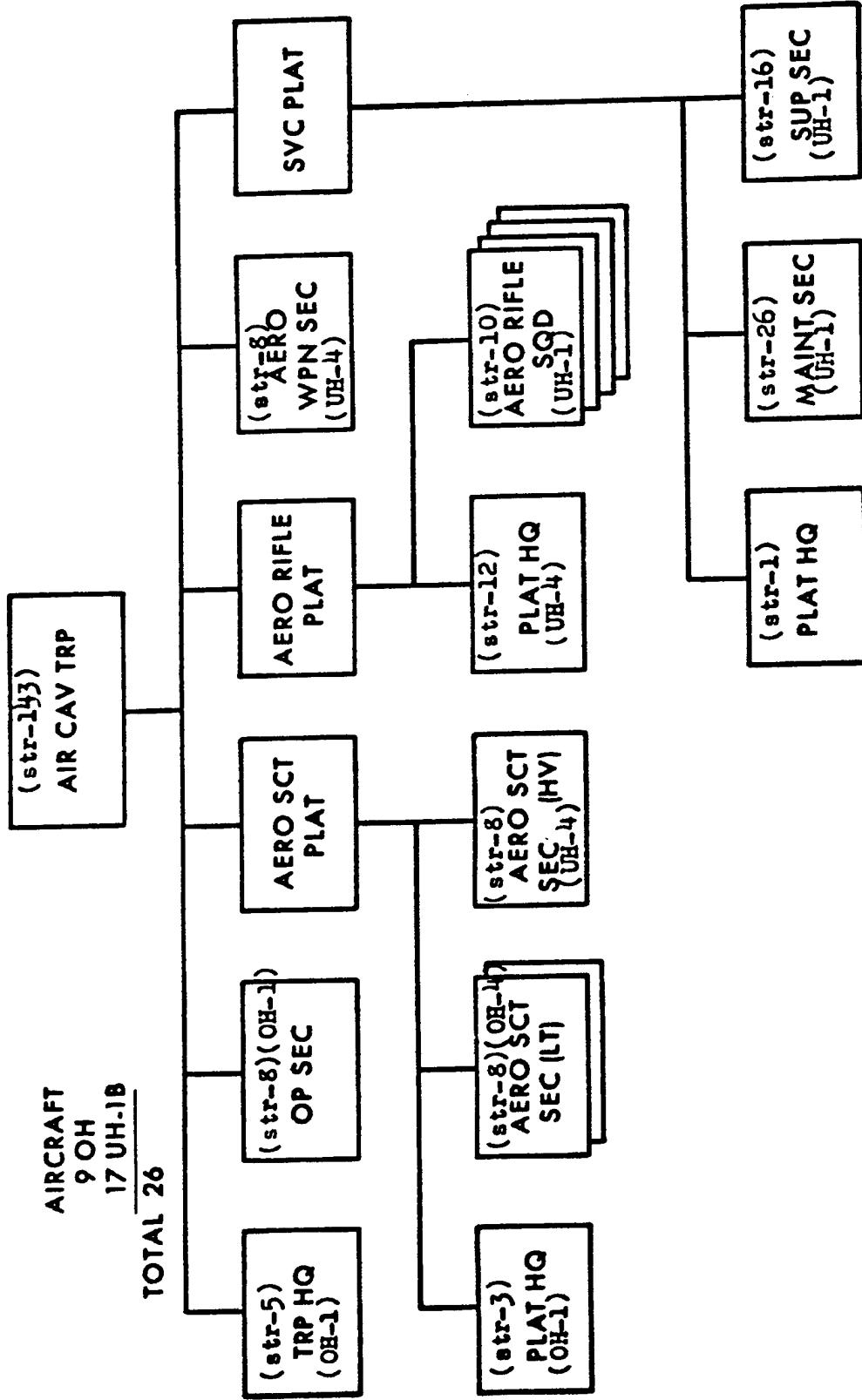


Figure 14. Air cavalry troop, division cavalry squadron  
(TOE 17-108E).

operations section is the focal point of combat operations. Manned by operation officers and assistants, this section has the communications means to control flight operations.

Requests for additional support normally flow from the operations section to the AAE. Conversely, the AAE notifies the air troop operations section of requirements for aircraft required to provide support for other units.

#### Artillery Aviation Section

Ten observation helicopters and twenty-four personnel are organic to the division artillery headquarters and headquarters battery. Two Ov-1 aircraft augment the section as required to provide an airborne sensory capability.

Capabilities of the section are as follows:

- (1) Adjustment of artillery fires.
- (2) Aerial vehicles for command and control.
- (3) Aerial observation and reconnaissance.
- (4) Aerial wire laying.
- (5) Aerial radio relay.
- (6) Radiological survey.
- (7) Limited aerial resupply.
- (8) Augmentation to the Army Medical Service for aeromedical evacuation.
- (9) Limited battle area illumination.<sup>21</sup>

The aircraft are normally based in the vicinity of the artillery fire direction center in order to provide maximum aviation support. Replacements or reinforcement aircraft may be obtained from the aviation battalion through the AAE.

The section commander, a major, is also the division artillery aviation officer. He coordinates with the artillery intelligence and operations

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<sup>21</sup>Common Subjects for Army Aviation, p. 81.

officer; together they determine the employment of aircraft. When required, aircraft are further decentralized and attached to field artillery battalions. This procedure would be valid when an artillery battalion is attached to a brigade on an independent mission. Normally, however, aircraft operate under the control of the aviation officer who employs his aircraft to accomplish missions as required by division artillery.

Close coordination with the AAE is necessary to prevent duplication of observation missions. Frequently, artillery targets are reported to the AAE by the aviation battalion, a brigade aviation section, or air cavalry troop. The AAE advises the division artillery aviation section of the target who in turn takes the target under observation for fires.<sup>22</sup>

#### Brigade Aviation Section

The section is organic to the brigade headquarters and headquarters company; fourteen personnel and six observation helicopters are assigned to the section. Capabilities of the section are as follows:

- (1) Aerial vehicles to be employed for command and control purposes.
- (2) Aerial observation and reconnaissance.
- (3) Aerial wire laying.
- (4) Radiological survey.<sup>23</sup>

The section commander is the brigade aviation special staff officer. He works in close coordination with the brigade operations officer.

The brigade operations officer assigns missions to the section. Aircraft usually remain under the direct control of the section commander and

<sup>22</sup>Ibid., pp. 84-85.

<sup>23</sup>Ibid., p. 86.

operate from the brigade command post. However, it is also normal to attach aircraft to one or all of the maneuver battalions currently attached to the brigade. This procedure would be particularly applicable when elements are actively engaged in combat. Units request aviation support through the brigade operations officer.

Requirements for aviation may exceed the capabilities of the section, such as when a brigade commander elects to transport troops up to a company size by obtaining additional aviation support. Where requirements exceed brigade aviation capabilities, normal procedures call for the brigade to contact the division AAE which in turn assigns the mission to the aviation battalion.

#### Maintenance

Current categories of maintenance are listed as follows: (1) organizational, (2) direct support, (3) general support, (4) depot.<sup>24</sup> Previously, maintenance activities were placed in five categories which were designated as first through fifth echelon. The current categories include the previous echelons as follows: (1) organizational, first and second echelon; (2) direct support, third echelon; (3) general support, fourth echelon; (4) depot, fifth echelon.

Aircraft maintenance activities within the division are normally restricted to organizational and direct support. General support maintenance is provided by a transportation aircraft general support company

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<sup>24</sup>U. S. Department of the Army, Army Regulation 750-1, Maintenance Concepts, (Washington: U. S. Government Printing Office, 30 Oct 63), p. 1.

assigned to field army or independent corps.<sup>25</sup> This support company has the capability to provide back up direct support maintenance to divisions by dispatching maintenance teams to the division or the aircraft may be flown to the rear for maintenance. The latter procedure is preferred.

#### Organizational Maintenance

The amount and level of organizational maintenance performed in each unit is dependent on, (1) complexity of the aircraft, (2) authorized skill levels, (3) number of maintenance personnel assigned, (4) how well individuals are trained, (5) tools and test equipment authorized. Obviously, a large amount of complex organizational maintenance is performed in the aviation battalion where larger and more complex equipment is maintained. By contrast, comparatively little maintenance is performed on the observation helicopters in the brigade.

The required amount of supervision and the ability of the supervisors is necessarily consistent with the amount and complexity of organizational maintenance to be performed. Appropriately, some of the aviation units in the division are authorized aircraft maintenance officers. In contrast, aviation sections in division artillery and the brigades rely on a noncommissioned officer to supervise maintenance.

All aviation unit and section commanders are responsible for organizational maintenance. Each aviation commander answers to his parent

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<sup>25</sup>U. S. Department of the Army, TO&E 55-458D, Transportation Aircraft General Support Company, (Washington: U. S. Government Printing Office, 24 Apr 63), p. 1.

unit commander on matters pertaining to maintenance. Thus, the airmobile company commander comes under the direct supervision of the aviation battalion commander. If a maintenance problem or deficiency exists in the airmobile company, the company commander and the battalion commander resolve the matter. As a contrast to this relationship where two aviation commanders are involved, the air troop commander in the armored cavalry squadron looks to the commander of the squadron who is not only interested in aviation maintenance but also tank and armored personnel carrier maintenance, etc. The same situation applies to the artillery and brigade aviation section. It should be pointed out that the latter procedure is not peculiar to aviation; it is normal for a commander of a unit to be responsible for all organizational maintenance performed in his unit to include aircraft electronic, vehicle, missile, etc.

#### Direct Support Maintenance

The division support command, figure 15,<sup>26</sup> contains the maintenance battalion which performs all divisional direct support maintenance. The transportation aircraft maintenance company, organic to the maintenance battalion, performs the aircraft direct support maintenance. (figure 16<sup>27</sup>) Company headquarters and a portion of the maintenance functions are normally located at or near the division instrumented airfield.<sup>28</sup>

<sup>26</sup>U. S. Department of the Army, Field Manual 54-2, Division Logistics and the Support Command, (Washington: U. S. Government Printing Office, 20 Dec 61), p. 10.

<sup>27</sup>Common Subjects for Army Aviation, p. 91.

<sup>28</sup>U. S. Department of the Army, Field Manual 9-30, Maintenance Battalion, Division Support Command, (Washington: U. S. Government Printing Office, 6 Dec 61), p. 45.

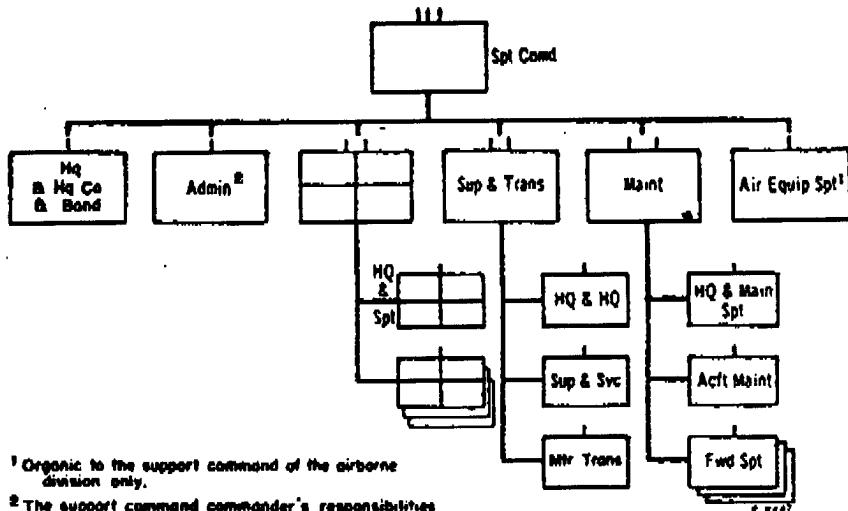


Figure 15 Division support command.

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Ideally, all aircraft direct support maintenance would be expeditiously performed on site or at the unit location. This procedure would save valuable time required to fly or transport aircraft back to a maintenance facility and fly it back to the unit. However, this procedure would require an enormous amount of special equipment and a large organization.

The company is organized with the objective of minimizing the number of personnel and amount of special equipment required and also provide good and timely support to the supported unit. Responsiveness versus efficiency are factors in designing an organization to perform direct support maintenance. Efficiency is achieved by a policy which calls for most of the complex or extensive maintenance to be performed by the main support section located at the division airfield where special facilities, tools, test equipment, and a pool of personnel possessing special skills are located.

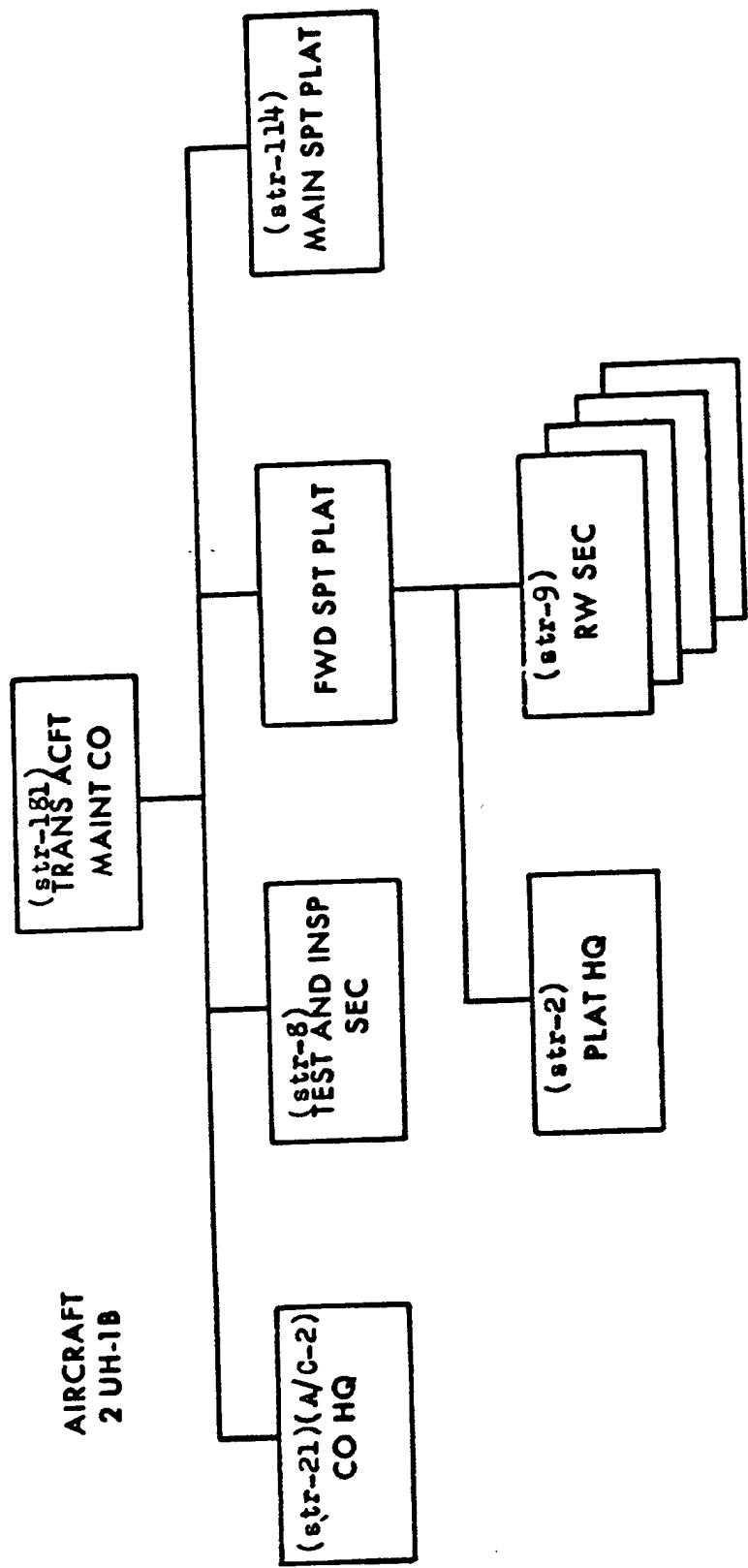


Figure 16. Transportation aircraft maintenance company, division maintenance battalion  
(TOE 55-89E).

Forward Support Platoon

Responsiveness is provided by forming mobile work parties which perform field maintenance at the site of the aircraft. Work parties attempt to repair aircraft on site; if this is not practicable or possible, aircraft are repaired to permit a one-time flight or surface evacuation if necessary. The work parties include personnel possessing skills as required. A few of the less bulky repair parts are carried by the party.

Each of the four rotary wing sections is responsible for a portion of the division forward area and performs direct support maintenance on all aircraft in that area. Consequently, a section may be in support of two or more aviation units at any given time.

Maintenance Procedures

The supported unit notifies the maintenance company well in advance when maintenance requirements are anticipated. Schedules are made and followed closely to provide an even workload. Unscheduled maintenance, such as an aircraft in an unflyable condition because of battle damage, is handled on an on-call basis. The maintenance company will provide support through utilization of one of its forward support sections;<sup>29</sup> it may, depending on the urgency of the situation, use its organic helicopter to transport a work party to the site of the damaged aircraft.

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<sup>29</sup>Ibid., p. 47.

## CHAPTER V

### APPRAISAL OBJECTIVES AND PROCEDURES

The purpose of this chapter is two-fold. First, appraisal objectives, limitations stipulated by the writer, and techniques and procedures used during the appraisal will be outlined. Second, procedures and methods used to gather information will be explained in order to establish credibility of opinions and information used in the appraisal. Accumulation and statistical treatment of information will also be discussed.

#### Appraisal Objectives

The primary purpose of the next chapter is to appraise the current ROAD division aviation organization. A secondary purpose is to examine a hypothetical organization proposed by the writer. In order to avoid duplication and repetition both organizations will be simultaneously appraised and compared. The comparisons will be based on the capability of each organization to support current missions of division aviation.

The writer's proposed organization is similar to the ATFA concept. All aircraft, aviation equipment, associated personnel, and the direct support maintenance functions would be assigned to the aviation battalion. (See figure 17) Division units would request aviation on a daily basis or as necessary. The AAE element under the supervision of the G3 would establish priorities as required.

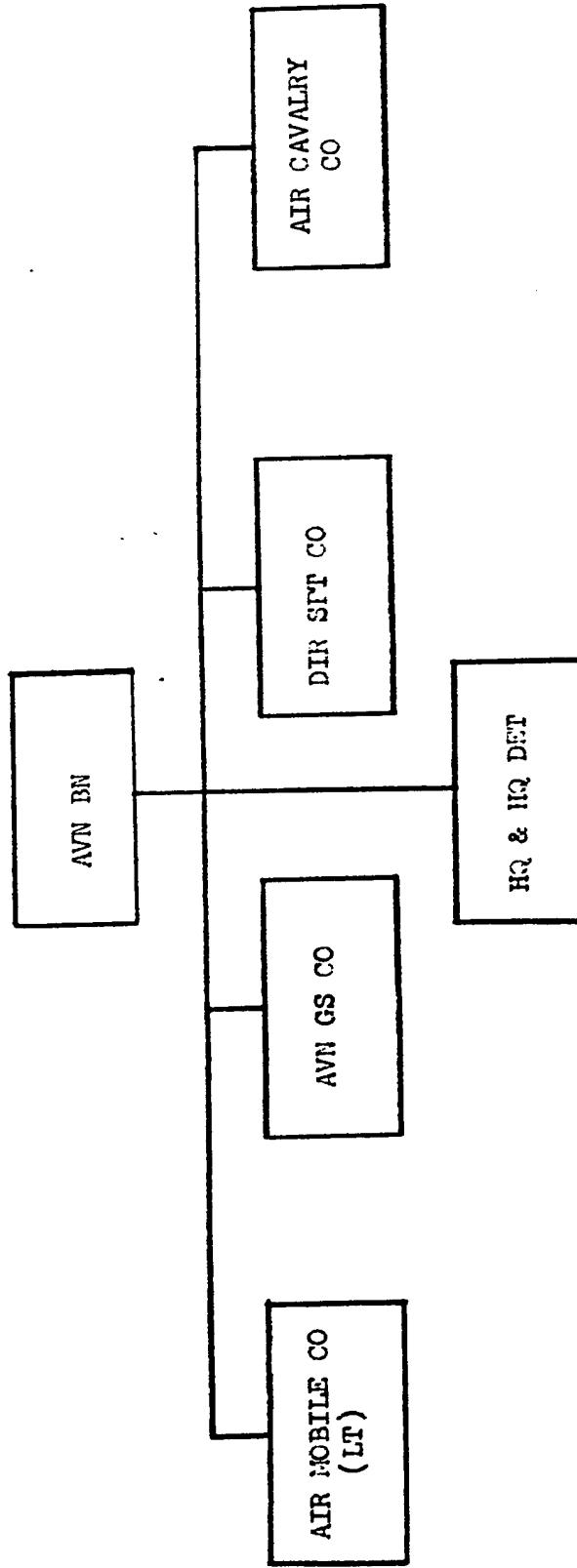


Figure 17. Proposed aviation organization.

Areas to be appraised and compared are limited to the following:

- (1) Responsiveness to the commander's needs measured in time.
- (2) Efficiency measured in utilization of available aircraft.
- (3) Operational capabilities of pilots and aircraft.
- (4) Division special staff officer responsibilities.
- (5) Organizational and direct support maintenance.

#### Procedures

Little was to be found in the form of published or unpublished information which would contribute to an appraisal of the current organization. Consequently, there was a requirement to obtain opinions and information from the users in the field. Personal interviews of individuals, although desirable, was not practicable nor would this procedure provide an acceptable record of opinions and information. An alternative was to distribute questionnaires to appropriate officers who have had recent experience in a ROAD division. Questionnaires were written and designed to cover all aspects of organization consistent with the objectives and limitations of the appraisal. The initial questionnaires were sent to appropriate officers in the 1st Infantry Division at Fort Riley, Kansas. A subsequent visit to that headquarters was made by the writer to determine the validity of the questionnaire. Subsequently, minor changes were made prior to distribution. Hence, it is believed that the questionnaires are valid.

Questionnaires were written and designed to gather information from the following staff or command positions: (1) division general staff officer, (2) brigade commander, (3) division artillery commander, (4) cavalry squadron commander, (5) aviation battalion commander, (6) support

command commander, (7) maintenance battalion commander. Five separate and distinctly different questionnaires were distributed. Many students attending the Regular Course at the United States Army Command and General Staff College have recently served in a ROAD division where their duties were directly or indirectly associated with aviation. Records of all Army students in the College were reviewed. Students were selected for questioning if they had served in one of the seven organizations listed above immediately prior to attending the current course. Approximately fifty-five students were selected and were asked to complete the questionnaire although many of them had not served as a commander. For example, brigade or division artillery S-3s were asked to make comments as a commander.

Seven questionnaires were sent to appropriate officers in each of fifteen divisions in the United States and overseas areas; well over sixty percent were completed and returned.

The cover letter on each questionnaire explained its intent. Officers were asked to express their personal views and not those of the division or policies of the division. It is believed and accepted that individuals did express their personal views where asked and therefore added to the value of primary source material.

Information gained from all questionnaires pertaining to one commander or staff officer was compiled and listed on the applicable questionnaire. Accordingly, seven completed questionnaires are listed as appendices one through seven to this paper. Results are listed according to three categories as follows: (1) divisions in the Zone of the Interior (Z.I.), (2) divisions overseas (O.S.), (3) students.

Few divisions possess 103 aircraft although they are gradually attaining that number. Some units are organized under a general order which has reduced the number of authorized aircraft. Other units are not fully equipped with observation helicopters in the brigades or division artillery and therefore are still operating with fixed wing aircraft. Bearing in mind that the current organization and concept of operations is based on units possessing their full authorization of aircraft and of the correct type, it was realized this situation could adversely effect information gathered from the questionnaires. Therefore, questions were asked pertaining to both the current conditions and a visualization of conditions in combat where all authorized aircraft are assigned.

Some of the individuals elected not to answer all questions due to not having sufficient knowledge of the problem or not having a firm opinion. Therefore, it will be noted that the total number of responses pertaining to each question frequently is less than the number of participants.

It was desirable to obtain responses from an equal number of personnel serving in maintenance, combat elements, and general staff positions. However, this was not possible due to the fact that very few students have recent experience in a maintenance battalion or support command; hence, a low number of support command and maintenance battalion participants.

## CHAPTER VI

### APPRAISAL OF THE ROAD AVIATION ORGANIZATION

The purpose of this chapter is as follows: (1) to appraise the ROAD aviation organization, (2) to examine the writer's proposed organization, (3) to make a comparison based on the capability of each organization to support the missions of division aviation.

The chapter is divided into three parts: (1) a discussion of factors to be considered, (2) a summary of facts and opinions extracted from questionnaires, (3) conclusions.

#### Factors to be Considered

##### Responsiveness to the Commander's Needs

Advocates of a concept which provides organic aircraft in units having a high and continuing requirement for aviation support, insist that this is the only method which will insure that aircraft will be available where and when required. Furthermore, a commander who controls his own aircraft can insure they are available in the quantity required. This concept is employed in ROAD which provides organic aircraft to the artillery, brigades, and cavalry squadron (division combat elements).

The writer's proposed organization is based on a concept that aircraft and crews will be dispatched to the combat element on an "as required" basis.

The factors to be considered are as follows: (1) must aircraft be assigned to a unit to insure responsiveness, (2) could the proposed organization provide an acceptable degree of responsiveness.

#### Efficiency of Aircraft Utilization

##### Economy of Effort

Supposedly, the greatest advantage of the proposed organization is economy of effort. Aircraft sortie requirements versus sortie availability can be managed more effectively where aircraft are centralized.

##### Aircraft Location

According to ROAD doctrine, combat elements habitually retain organic aircraft in the unit area. If this procedure is found to be practicable the position which calls for organic aircraft is strengthened. On the other hand, if aircraft are flown to the division airfield or other location, the argument for organic aircraft is weakened; aircraft could just as easily be dispatched on a daily basis from a centralized pool.

##### Aircraft Augmentation

The ROAD concept provides what is thought to be an adequate number of aircraft for each combat element. However, provisions are made for the aviation battalion to provide additional aircraft when required. Conversely, it may be necessary to augment the aviation battalion with aircraft organic to combat elements, or the division commander may elect to temporarily pool all aircraft in order to accomplish high priority missions.

If units habitually require aircraft reinforcement the position for centralized control is strengthened. On the other hand, it may be practical for the AAE element to reallocate aircraft when required.

## Pilot Capabilities and Considerations

### Combat Element Aviation Staff

Each combat element is provided a permanent aviation unit in the ROAD organization. The aviation unit commander and pilots can easily remain familiar with standing operating procedures and the current tactical situation. In the proposed organization there would be little assurance that the same pilots could consistently support a combat element, and, therefore, extensive briefings might be required to orient pilots. Another factor to consider in the proposed organization is the loss of a full-time aviation staff officer in the combat elements.

### Pilot Capabilities

Commanders in the ROAD organization soon become aware of individual capabilities of their assigned pilots and, if required, will direct training to increase their effectiveness. In the proposed organization commanders would receive pilots of unknown quality. On the other hand, the importance of this consideration may be significantly reduced if commanders were assured all pilots are highly trained and capable.

### Division Aviation Staff

#### Pilot Training and Standardization

The ROAD division aviation officer is responsible for technical training and standardization of all division pilots. He must coordinate with seven aviation units, five of which are not under his command. In the proposed organization the aviation officer has direct command of all pilots and, therefore, would enjoy direct and positive control over training and standardization programs. The relative effectiveness of the aviation officer in each organization will be considered.

### Maintenance

The ROAD concept provides for all direct support maintenance to be performed by the maintenance battalion. Those who support this concept insist that aircraft maintenance is not peculiar and, therefore, should remain a function of the maintenance battalion. There are others who believe that one commander should be responsible for both operations and maintenance of aircraft as is accomplished in the proposed organization. Factors which will be considered during the comparison and appraisal are as follows: (1) quality of maintenance, (2) economy of personnel and material, (3) maintenance supervision, (4) span of control.

### Questionnaire Summary

This summary is based entirely on facts and opinions expressed by officers who returned questionnaires. It will be divided into two parts as follows: (1) appraisal of the ROAD aviation organization followed by a look at a ROAD aviation organization with the exception that the aircraft direct support function is transferred to the aviation battalion, (2) evaluation of the writer's proposed organization.

### RCAD

#### Responsiveness to the Commander

1. All participants believe aircraft are properly organized to insure responsiveness.
2. Of nineteen general staff officers polled, seventy-two percent believe that the desired degree of responsiveness can only be achieved by assigning aircraft to combat elements.

Aircraft Utilization

Since many divisions do not possess all authorized aircraft, this summary will indicate how divisions utilize aircraft on field training exercises versus how participants envisioned aircraft would be utilized in combat conditions.

Utilization During Field Training Exercises

1. Twenty-five percent of the combat elements frequently find it necessary to request additional aircraft. This is almost entirely attributed to a shortage of aircraft or pilots.
2. The aviation battalion supplements artillery, brigade, or cavalry squadron during at least sixty percent of exercises performed, (this is one of the normal functions of the battalion).
3. Approximately seventy percent of the combat elements retain organic aircraft in the vicinity of the unit command post or trains during night conditions. Of those who send aircraft to the division airfield at night, most do so for maintenance reasons or because they still have fixed wing aircraft which require a semi-prepared runway.

Utilization During Combat Conditions

1. Approximately seventy-five percent of participants envision that they would retain aircraft in the unit area during night conditions. Local security and enemy fires were reasons given by those who would not retain aircraft.
2. More than half of the combat element commanders envision their units would frequently require additional aircraft. Battle damage and a shortage of spare parts would be the major cause for this requirement.

3. According to ninety percent of the aviation officers, aircraft need not be centralized to insure high priority missions are accomplished. They believe that the division G-3 and the AAE can establish priorities based on the situation and accordingly reallocate aircraft when required.

#### Aircraft Maintenance

1. Combat element commanders believe, without reservation, that the current organization is adequate.
2. Approximately eighty percent of support command and maintenance battalion commanders believe the ROAD maintenance concept is sound.
3. Approximately half of the aviation officers believe the direct support maintenance function should be in the maintenance battalion.
4. Approximately eighty percent of the support command and maintenance battalion commanders are opposed to a proposal calling for the transfer of the transportation aircraft maintenance company to the aviation battalion.
5. Approximately half of the general staff and aviation officers believe the transportation aircraft maintenance company should be transferred to the aviation battalion.
6. One division has transferred the transportation aircraft maintenance company to the aviation battalion. Participants, who are members of this division, state that results are increased aircraft availability and higher quality maintenance.

#### Proposed Organization

#### Responsiveness to the Commander's Needs

1. Two-thirds of the general staff officers believe the proposed organization could provide adequate responsiveness to the unit commander.

2. All combat element commanders believe ROAD provides for better response than would the proposed organization.

3. Approximately eighty-five percent of the combat element commanders believe that aircraft responsiveness would be reduced to a point where operations would be adversely effected.

#### Responsiveness Versus Aircraft Optimum Utilization

1. Two-thirds of general staff officers feel the proposed organization could provide for optimum aircraft utilization.

2. Two-thirds of general staff officers feel responsiveness would be greatly reduced. They also believe responsiveness and not optimum utilization should be the criteria for an organizational concept. Therefore, they prefer ROAD to the proposed organization.

#### Pilot Capabilities and Considerations

1. Approximately half of the artillery and brigade commanders believe that it is not necessary to have the same pilots fly in support of their unit.

2. Cavalry squadron commanders feel that the same pilots should fly in support of their units. Some commanders believe the pilots should be armor trained.

3. Approximately seventy-five percent of the aviation battalion commanders believe pilots could fly multiple type missions with the provisions that all missions are in the same type aircraft.

#### Aviation Special Staff

Division aviation officers are divided in their estimates of how the proposed organization would effect their responsibilities pertaining to

technical supervision, training, operations, safety, and administration. Approximately one-third believe their effectiveness would be increased; another third believes it would remain unchanged and the remaining third believes their effectiveness would decrease.

Maintenance

1. Eighty percent of the support command and maintenance battalion commanders believe the transportation aircraft maintenance company should remain in the maintenance battalion notwithstanding the organization of aircraft.

2. Approximately seventy-five percent of the participants in each command or staff position believe the proposed organization, when compared to ROAD, would provide for a reduction in spare parts required to be on hand and ground handling equipment. Approximately sixty percent of the same officers feel there would be a decrease in required maintenance personnel.

3. Approximately sixty percent of the general staff and aviation officers believe the maintenance company should be transferred to the aviation battalion if the aircraft are centralized into the aviation battalion.

4. Approximately ninety percent of the aviation officers believe they could effectively maintain and support aircraft when organized according to the proposal.

5. Approximately fifty percent of the aviation officers believe that the quality of direct support maintenance would be improved when compared to ROAD. Approximately twenty-five percent feel quality would remain the same while the remainder feel quality would be reduced.

6. Approximately ninety percent of the aviation officers believe the added responsibility of direct support maintenance would not interfere with their operational responsibilities.

#### Conclusions

Conclusions listed below are based on the summaries of the questionnaires and are believed to represent opinions of division command and staff officers. The writer's personal views and comments are outlined in the following (last) chapter.

#### Operations

The ROAD organization for division aviation is considered to be satisfactory. In many respects it is superior to previous organizations although it does combine many desirable characteristics of the ATFA and ROCID concept. Advantages of ROAD are as follows: (1) combat element commanders are assured responsiveness by the provision which assigns organic aircraft to their units, (2) a division "reserve" of aircraft is available should combat elements require augmentation, (3) combat element commanders need not compete with other units for priorities since they are assigned organic aircraft, (4) a pool of utility and liaison aircraft is available for divisional units which do not have a continuous requirement for aviation support, (5) flexibility is provided by delegating authority to the G-3 and aviation officer so that they may reallocate aircraft when required.

On the other hand, ROAD does not provide a means for a desirable pilot training and standardization program. The aviation officer would be more effective in the discharge of these responsibilities when

organized according to the proposed organization. The writer does not consider the latter points to be of significant importance to warrant reorganization.

#### Maintenance

There are two concepts of maintenance organization held by division officers. First, support command and maintenance battalion commanders believe aircraft direct support maintenance should be a function of the maintenance battalion. They believe this concept is valid regardless of how aircraft are distributed within the division.

Second, a majority of general staff officers and aviation battalion commanders believe the aircraft direct support maintenance company should be transferred to the aviation battalion.

Both views are supported with sound reasoning. Many participants upholding their respective views qualify their remarks by relating personal and practical experiences.

The writer recognizes opinions expressed by participants are, in many instances, parochial. Participants responsible for direct support maintenance are not simply supporting the current aircraft maintenance organizational concept; they are supporting a maintenance organizational concept which provides for all direct support maintenance to be a function of one organization--the maintenance battalion. On the other hand, few general staff officers or aviation officers have served in the newly formed support command.

**Summary**

The organization of direct support maintenance is the only significant and controversial aviation subject within the divisions. This subject is not restricted to division aviation. It is concluded that, rightfully or wrongfully, direct support maintenance will continue to remain a function of the maintenance battalion until a thorough evaluation of the concept of functionalized maintenance can be made.

## CHAPTER VII

### IMMEDIATE AND LONG RANGE CONSIDERATIONS

The purposes of this chapter are three: (1) to provide a brief review of the first six chapters, (2) to examine immediate organizational considerations, (3) to discuss long range organizational considerations.

#### Review

1940-1945

One of the many missions of the Army Air Forces was to provide aerial observation, transportation, and liaison support for the Ground Forces. However, the Air Forces were unable to adequately support the Ground Forces due to a shortage of aircraft. Consequently, the War Department authorized the Ground Forces to procure two organic light observation aircraft for each field artillery battalion. Although the Ground Forces continually pressed for authorization of liaison aircraft which would be organic to other divisional combat elements, the proposals were denied; accordingly, the Air Forces continued to provide aircraft liaison support. However, division commanders in the combat zones frequently found that their requirements for transportation and liaison support exceeded the Air Forces' capability. Consequently, they were often forced to centralize artillery observation aircraft at the division airfield and use them for tasks other than artillery observation.

The War Department initiated action to formally centralize all artillery observation aircraft within the division, but the Ground Forces successfully resisted stating that it would be incorrect to deny artillery battalions their organic aircraft.

#### 1945-1948

The Ground Forces continued to press for additional aircraft to be organic to other divisional combat elements. Final approval came a few days prior to the end of the war but too late to allow procurement. The years of demilitarization and austerity, following the war, saw a reduction rather than an increase of Ground Forces aircraft. Consequently, in 1948, the Ground Forces were forced to centralize aircraft into a divisional headquarters unit with the exception of aircraft which remained organic to field artillery.

#### 1948-1954

Essentially, 1948 saw the first formalized control of the Army aviation and, thus, the formulation of doctrine. However, the evolution of doctrine was painfully slow; for example, staff manuals failed to mention the aviation special staff officer much less to provide guidance.

In 1949, the Army and Air Forces jointly delineated the type of missions which could be performed by Army aviation. Also established for the first time was an ordnance aircraft maintenance company which provided field maintenance support.

By 1951 service schools began to formulate doctrine. Many of the practices taught by the aviation school were included in a new Field

Manual 20-100, published in 1952; this was the first manual to reflect official and current doctrine.

Division aviation was again decentralized in 1952; this change was made possible by the vast increase in procurement of aircraft during the Korean War.

#### 1954-1957

New concepts in land warfare were influential in the formulation of the entire division organization and, therefore, the aviation organization. The ATFA and the ROCID type divisions were formed and tested during this period. Meanwhile, standard divisions continued to function according to 1953 doctrine.

The ATFA divisional concept was tested but never employed in a regular division. The concept provided for strong centralized control of all divisional units. Accordingly, the first aviation company was formed.

The ROCID, ROCAD, and ROTAD concept was tested in 1956-1957. Centralization was slightly deemphasized, but all aircraft remained in the aviation company. Great strides were made in the formulation of doctrine during the tests.

#### 1957-1962

Provisions of the ROCID test organization and doctrine were implemented, in 1957, when standard divisions reorganized. Training text publications used during the tests were republished as official Army doctrine. Minor changes were made in organization and doctrine during this period. The trend was toward decentralization as was reflected by

changes in the organization of the aviation company. These changes to decentralization were made possible by gradual build up in aircraft inventory.

1962-

Divisions were reorganized and reequipped to conform to new concepts of land warfare. Whereas the main emphasis had formerly been placed on nuclear warfare, the new concept provided for an equal capability to conduct conventional operations. The Army received authorization to procure vast amounts of equipment to include aircraft; the number of aircraft authorized in each division was doubled. In addition, all but four aircraft in the new division were to be helicopters. The mission of division aviation was expanded to include armed reconnaissance and a sizeable troop transportation capability.

The authorization of additional aircraft permitted a reorganization of aviation which, again, provided organic aircraft for all combat elements. Half of the aircraft are held in a pool to support other divisional units or to augment combat elements.

The direct support maintenance unit has never been a formal part of the division aviation organization. In 1953, the aircraft maintenance function was transferred to the transportation corps where it has since remained. It is now organic to the division maintenance battalion.

#### ROAD Appraisal

The writer generally concludes that the ROAD organization is effective in providing the framework for the accomplishment of the aviation mission.

It is particularly effective in the following: (1) provides responsiveness to the combat element commanders, (2) provides a "reserve," should combat elements require augmentation, (3) aviation support for other divisional units is provided by a pool of utility and liaison aircraft, (4) flexibility is provided by the reallocation of aircraft when required. On the other hand, the aviation officer is not in a strong position to initiate and monitor pilot training and standardization programs.

The writer is unable to draw conclusions pertaining to the effectiveness of the ROAD aircraft maintenance organization. In general, participants took a prochial approach to the subject. Judging from the comments of the participants, it appears that the subject of direct support maintenance encompasses maintenance on all equipment in the division. Therefore, the aircraft direct support maintenance function is not likely to be moved to the aviation unit unless the Army finds the functionalized maintenance concept to be undesirable.

#### Immediate Organizational Considerations

The remainder of the paper reflects the opinions of the writer. Although fully aware of the environmental differences between Army and Air Forces aircraft operations, the writer believes many of the organization problems can be solved by similar methods. It is realized that many organizational concepts employed by the Air Force are not applicable to Army aviation. Accordingly, the discussion will be limited to those areas which may be worthy of future consideration.

## Operations

Pilot combat effectiveness could be greatly increased by placing all aviators in one divisional organization. In wings assigned to the Tactical Air Command, the wing deputy commander for operations commands all aviation personnel; tactical squadron commanders are under his command. The advantages of this concept are as follows: (1) supervisors and pilots may readily be transferred within the wing to maintain an even distribution of supervision and experience, (2) ground and flying training programs are centrally supervised and monitored, (3) all procedures and techniques are standardized through a rigid flying standardization program, (4) aircraft sorties are distributed on an "as required" basis to provide adequate training for all units.

Notwithstanding the above advantages, the most beneficial characteristic of this concept is that it provides a solid chain of command and supervision from top to bottom of the organization. Personnel responsible for training and standardization are not restricted to "technical" supervision as is the aviation officer in the division when he supervises the cavalry air troop, artillery, or brigade aviation section.

Could this concept apply in an Army division? The writer believes that it could with small modifications to the proposed organization. It is recognized that the requirement exists for aircraft and pilots to be co-located with the combat elements during field training exercises or combat conditions. The same pilots should support a designated brigade whenever feasible in order to provide continuity in operations and planning. The same procedure should be followed when providing aviation support to field artillery. However, pilots and aircraft need not be

organic to the combat element. Instead, support flights could be formed in the direct support company of the proposed organization as shown in figure 18.

This resembles the ROCID organization with the exception that each flight would be in a support status, a status similar to that of the forward terminal team of the signal battalion when placed in support of each brigade. In both cases the supporting unit remains with the combat element when under field conditions; it receives class I and III supplies from the combat element, operationally supports the combat element, but is under the command of the parent battalion commander.

The advantages of this concept are as follows: (1) one commander is responsible for all operational aspects of division aviation, (2) a firm chain of command is established, (3) ground and flying training programs can be centrally supervised and monitored, (4) the aviation battalion commander may make personnel changes required to insure an even distribution of supervisory personnel and experienced pilots, (5) a rigid and effective flying standardization program could insure fully qualified combat ready pilots, (6) combat element commanders would be assured the support of the same flight commander (aviation officer), (7) the support flight would constantly be in position so that it could respond to the combat element commander's requirements.

Disadvantages of this concept are as follows: (1) combat element commanders lose some control over supporting personnel, (2) combat element commanders must rely on someone else to provide the aircraft, and, therefore, there is always a question of whether they will receive adequate support.

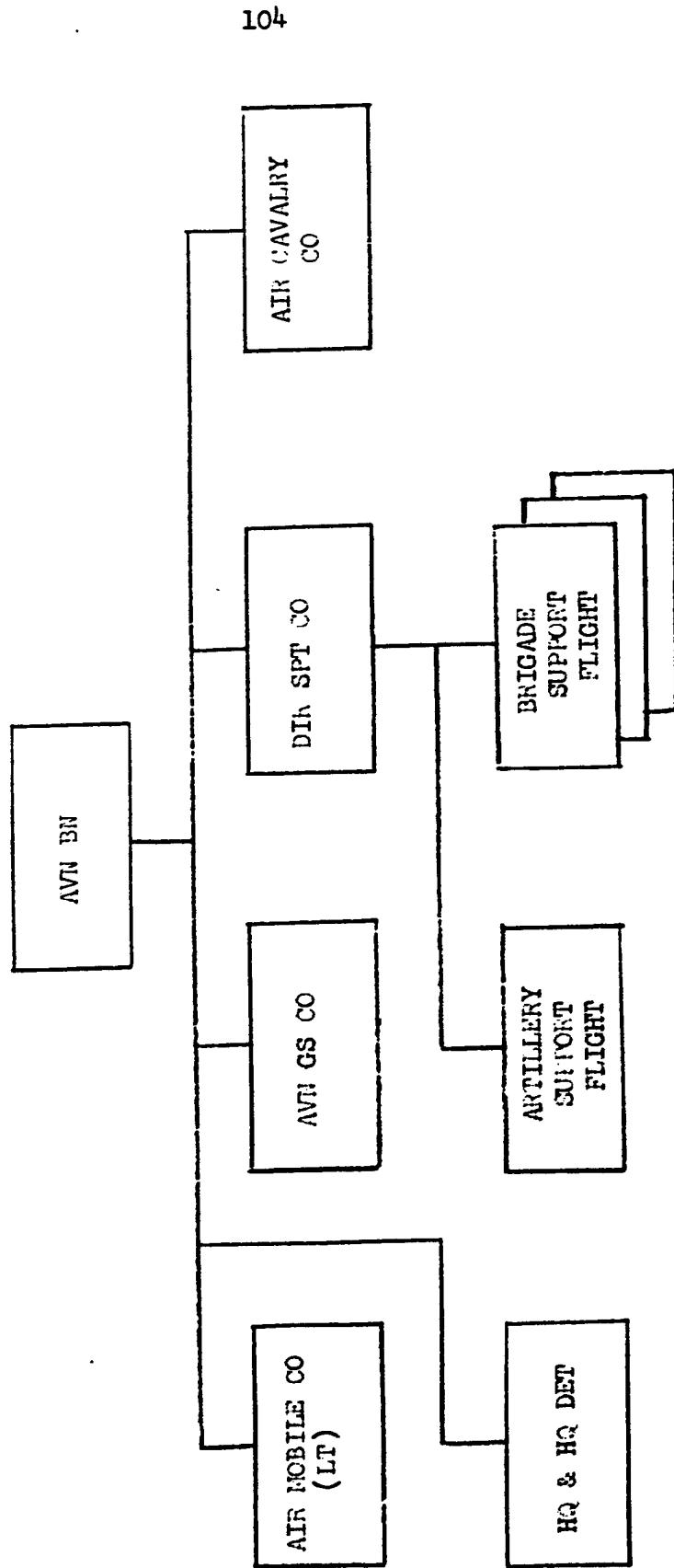


Figure 18. Direct Support Company, proposed organization

The last disadvantage is one which is voiced loud and long by those who favor the ROAD aviation concept. However, the writer has not been able to completely resolve why the centralized concept receives major criticism when applied to aviation alone. The concept of the artillery, engineer, and signal battalions providing direct support or support has been widely accepted.

While there are strong feelings within the divisions that the air troop must be organic to the cavalry squadron, the advantages gained by the proposed organization cannot be overlooked. Cavalry squadron commanders would be assured the same combat power if the air troop was placed in their "support." It has been noted that the air troop is frequently detached from the cavalry squadron in practical problems used for instructional purposes by the Army Command and General Staff College. Missions such as rear area security, attachment to covering forces, etc., are not uncommon. If this is an indication of the versatility of the air troop, the requirement for it to be organic to the cavalry squadron is reduced.

#### Maintenance

Really, all aircraft maintenance activities in the division would be under the supervision of one commander. This concept is possible in an Air Force unit since organizational and "field maintenance" personnel and facilities are on a common installation. The advantages of this concept are as follows: (1) the entire maintenance effort is intergrated under one controlling agency which allows firm schedules of preventive maintenance and inspections; (2) the commander establishes a single level of quality control through an headquarters agency which inspects both

organizational and field maintenance functions; (3) maintenance procedures and techniques are standardized by an headquarters agency directly responsible to the commander; (4) supervisory personnel may be readily redistributed as required; (5) personnel possessing critical skills may readily be redistributed as required.

All of the advantages listed above would apply to the writer's proposed aviation organization. The fact that aviation units are dispersed would not reduce the effectiveness of this concept. The maintenance officer's staff would require expansion to include standardization and quality control sections.

On the other hand, there are strong and convincing arguments which hold that all direct support maintenance performed in the division must be performed by a functionalized unit, as is now accomplished by ROAD. Advantages of this concept are as follows: (1) highly trained and professional maintenance personnel are pooled in one unit where their talents and capabilities are effectively utilized, (2) all personnel are oriented toward performing the maintenance function, and therefore, they are not distracted by operational problems, (3) one commander in the division is responsible for maintenance, and therefore, division-wide levels of standardization and quality control may be established, (4) there is a single goal of the maintenance unit and that is to provide a maximum number of aircraft which are properly maintained.

The degree of complexity and the extent of organizational maintenance to be performed is a major criteria which must be considered. As organizational maintenance becomes more complex, the requirement for centralized control and supervision becomes greater. Each generation of Army aircraft

is more sophisticated than the last. Consequently, the need for more supervision of organizational maintenance is ever increasing.

A compromise of the two concepts listed above should be considered. All aircraft maintenance personnel could be assigned to the aircraft maintenance company which would remain in the maintenance battalion. Organizational maintenance personnel would be attached to the aviation units. Although under the command of the aviation unit, organizational maintenance personnel would be under the technical supervision of the division maintenance officer. The advantages of this concept are as follows: (1) the maintenance officer could redistribute experienced supervisors when required, (2) a single level of quality control would be enforced by the maintenance company, (3) maintenance procedures and techniques could readily be standardized, (4) problems of maintenance scheduling could be reduced.

#### Long Range Organizational Considerations

Each division is authorized more than one hundred aircraft and seven hundred personnel who are associated with aircraft operations and maintenance. This force represents approximately five percent of the entire division personnel strength. The combined capabilities of this force represents a significant portion of division commander's resources. If correctly organized and trained, it will enhance his combat power. Conversely, the potential of this sizable force could be obviated if not correctly organized and trained.

The Army's official policy pertaining to the employment of aviation has largely been in consonance with joint service agreements and decisions

by the Department of Defense. At division level the role of aviation is restricted to the support of land combat elements and other divisional units. This policy has been a major contributing factor in formulation of division aviation doctrine and organization. It is basically sound but should now be modified to the extent required to provide an efficient aviation organization which is commanded, staffed, and manned by professional aviators who devote their career to aviation.

Under the current policy, an aviator is first a ground officer in one of several branches. If he does not frequently hold command and staff positions in his branch, he is likely to trail his contemporaries in career progression.

This situation should not continue in face of the growing role of Army aviation. As the capabilities of aircraft increase and aircraft become more complex, the requirements for professional aviators will be multiplied.

F-105D pilots were required, according to Air Force standards, to be qualified and proficient in ten methods of weapons delivery (nuclear and conventional), in 1963. Additionally, proficiency was required for day and night air refueling and all weather low level radar navigation. Pilots are able to meet these requirements and qualifications largely because being a combat ready pilot is their profession.

The division aviator should also be capable of performing all missions and capabilities of the aircraft in which he is qualified. Without any reservation, the writer believes pilots should fly the utility helicopter can and should be proficient in all missions whether they are in support of the cavalry squadron, carrying troops during airmobile operations, or

transporting supplies, etc. A division pool of highly trained and professional aviators would provide flexibility which will be required on the modern battlefield.

The Army should recognize that aviation is a profession in itself, and accordingly establish an aviation branch. Aviation officers could pursue their profession in the same manner as do armor, artillery, or infantry officers. In the writer's opinion, this change in policy will be required if the Army is to fully develop the combat potential of its divisional aviation equipment and personnel.

## APPENDIX I

### Questions for Brigade Commanders

Total Participants: 24

1. Do aircraft assigned to your unit remain in the unit area at night during FTX's?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	4		1
O.S.	7		1
STUDENTS	8	2	1
TOTAL	19	2	3

2. If aircraft assigned to your unit seldom remain in the unit area at night during FTX's, where are they parked?

- (A) centrally located near the division strip
- (B) centrally located near the support command area
- (C) centrally located in the division area other than above

	<u>A</u>	<u>B</u>	<u>C</u>
Z.I.	1		
O.S.	2		
STUDENTS	2		
TOTAL	5		

3. Do you visualize aircraft assigned to your unit would remain in the unit area at night during combat conditions?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	5		
O.S.	7	1	
STUDENTS	6	3	1
TOTAL	18	4	1

4. If you visualize aircraft assigned to your unit would seldom remain in the unit area during combat conditions, where would they be parked?

- (A) centrally located near the division strip
- (B) centrally located near the support command area
- (C) centrally located in the division area other than above

	<u>A</u>	<u>B</u>	<u>C</u>
Z.I.			
O.S.	1		
STUDENTS	2		2
TOTAL	3		2

5. Do you find it necessary during FTX's to request additional aircraft because of low in-commission status, pilot availability, or other reasons?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.		1	4
O.S.		2	6
STUDENTS	2		9
TOTAL	2	3	19

6. Do you visualize it would be necessary under combat conditions to request additional aircraft due to larger operational requirements, battle damage, shortage of parts, or other logistical reasons?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.		3	1
O.S.	1	2	4
STUDENTS	2	2	6
TOTAL	3	7	11

7. Assuming all pilots in the division are trained to meet high standards, do you feel it is necessary to have the same pilots fly aircraft in support of your unit under combat conditions?

	<u>Yes</u>	<u>No</u>
Z.I.	3	2
O.S.	6	3
STUDENTS	3	8
TOTAL	12	13

8. Assume aircraft of the type normally assigned to you are centralized and maintained by a divisional unit. Furthermore, assume the G-3 element of the DTOC is capable to control all of the aircraft in the division; the DTOC would receive your requirements each evening and dispatch aircraft to you the following morning at the time and place you designate. Assume the aircraft would be available to you for the entire day and that you could request additional aircraft if required. Do you feel this system would be responsive compared to the present concept where you control the aircraft directly?

	<u>More Responsive</u>	<u>Less Responsive</u>
Z.I.		5
O.S.		8
STUDENTS		11
TOTAL		24

9. If you feel the system described in question 8 above would be less responsive, do you feel the responsiveness would be reduced to a point where it would adversely effect your operations?

	<u>Yes</u>	<u>No</u>
Z.I.	6	
O.S.	6	1
STUDENTS	9	1
TOTAL	21	2

10. Do you feel the system described above in question 8 would come closer to meeting your requirements than the present system?

- (A) more assurance of meeting requirements
- (B) less assurance of meeting requirements

	<u>A</u>	<u>B</u>
Z.I.		4
O.S.		8
STUDENTS		11
TOTAL		23

11. From a logistical standpoint, do you feel logistical requirements (maintenance, spare parts, POL, etc.) required to support your presently assigned aircraft are of a magnitude to favor aircraft being centrally maintained and supported in the division?

	<u>Yes</u>	<u>No</u>
Z.I.	1	4
O.S.		7
STUDENTS	1	9
TOTAL	2	20

12. Do you feel your battalion/troop commanders should have their own organic aircraft for command and reconnaissance?

If so, what would be the logistical impact?

	<u>Yes</u>	<u>No</u>
Z.I.	1	4
O.S.	1	7
STUDENTS	1	10
TOTAL	3	21

## APPENDIX II

### Questions for Division Artillery Commanders

Total Participants: 18

1. Do aircraft assigned to your unit remain in the unit area at night during FTX's?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	5		
O.S.	3	1	1
STUDENTS	4		4
TOTAL	12	1	5

2. If aircraft assigned to your unit seldom remain in the unit area at night during FTX's, where are they parked?

- (A) centrally located near the division strip
- (B) centrally located near the support command area
- (C) centrally located in the division area other than above

	<u>A</u>	<u>B</u>	<u>C</u>
Z.I.			
O.S.	1		
STUDENT	3		1
TOTAL	4	0	1

3. Do you visualize aircraft assigned to your unit would remain in the unit area at night during combat conditions?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	5		
O.S.	4	1	
STUDENT	4	1	2
TOTAL	13	2	2

4. If you visualize aircraft assigned to your unit would seldom remain in the unit area during combat conditions, where would they be parked?

- (A) centrally located near the division strip
- (B) centrally located near the support command area
- (C) centrally located in the division area other than above

	<u>A</u>	<u>B</u>	<u>C</u>
Z.I.			
O.S.			
STUDENT	2		
TOTAL	2	0	0

5. Do you find it necessary during FTX's to request additional aircraft because of low in-commission status, pilot availability, or other reasons?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	1	1	2
O.S.			4
STUDENT		3	6
TOTAL	1	4	12

6. Do you visualize it would be necessary under combat conditions to request additional aircraft due to larger operational requirements, battle damage, shortage of parts or other logistical reasons?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	1	2	2
O.S.		2	3
STUDENT	1	5	2
TOTAL	2	9	7

7. Assuming all pilots in the division are trained to meet high standards, do you feel it is necessary to have the same pilots fly aircraft in support of your unit under combat conditions?

	<u>Yes</u>	<u>No</u>
Z.I.	2	3
O.S.	3	5
STUDENT	1	7
TOTAL	6	15

8. Assume aircraft of the type normally assigned to you are centralized and maintained by a divisional unit. Furthermore, assume the G-3 element of the DT is capable to control all of the aircraft in the division; the DTOC would receive your requirements each evening and dispatch aircraft to you the following morning at the time and place you designate. Assume the aircraft would be available to you for the entire day and that you could request additional aircraft if required. Do you feel this system would be responsive compared to the present concept where you control the aircraft directly?

	<u>More Responsive</u>	<u>Less Responsive</u>
Z.I.		5
O.S.		5
STUDENT	1	7
TOTAL	1	17

9. If you feel the system described in question 8 above would be less responsive, do you feel the responsiveness would be reduced to a point where it would adversely effect your operations?

	<u>Yes</u>	<u>No</u>
Z.I.	4	1
O.S.	2	2
STUDENT	4	2
TOTAL	10	5

10. Do you feel the system described above in question 8 would come closer to meeting your requirements than the present system?

- (A) more assurance of meeting requirements
- (B) less assurance of meeting requirements

	<u>A</u>	<u>B</u>
Z.I.	1	4
O.S.		5
STUDENT	1	7
TOTAL	2	16

11. From a logistical standpoint, do you feel logistical requirements (maintenance, spare parts, POL, etc.) required to support your presently assigned aircraft are of a magnitude to favor aircraft being centrally maintained and supported in the division?

	<u>Yes</u>	<u>No</u>
Z.I.		4
O.S.	1	4
STUDENT	2	6
TOTAL	3	14

12. Do you feel your battalion/troop commanders should have their own organic aircraft for command and reconnaissance?

If so, what would be the logistical impact?

	<u>Yes</u>	<u>No</u>
Z.I.	2	2
O.S.		4
STUDENT	6	3
TOTAL	8	10

### APPENDIX III

#### Questions for Cavalry Squadron Commanders

Total Participants: 10

1. Do aircraft assigned to your unit remain in the unit area at night during FTX's?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	6		
O.S.	2	1	1
STUDENT			
TOTAL	8	1	1

2. If aircraft assigned to your unit seldom remain in the unit area at night during FTX's where are they parked?

- (A) centrally located near the division strip
- (B) centrally located near the support command area
- (C) centrally located in the division area other than above

	<u>A</u>	<u>B</u>	<u>C</u>
Z.I.	1		
O.S.			2
STUDENT			
TOTAL	1	0	2

3. Do you visualize aircraft assigned to your unit would remain in the unit area at night during combat conditions?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	4	1	
O.S.	2		2
STUDENT			
TOTAL	6	1	2

4. If you visualize aircraft assigned to your unit would seldom remain in the unit area during combat conditions, where would they be parked?

- (A) centrally located near the division strip
- (B) centrally located near the support command area
- (C) centrally located in the division area other than above

	<u>A</u>	<u>B</u>	<u>C</u>
Z.I.			
O.S.			2
STUDENT			
TOTAL	0	0	2

5. Do you find it necessary during FTX's to request additional aircraft because of low in-commission status, pilot availability, or other reasons?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.			5
O.S.		1	3
STUDENT			
TOTAL	0	1	8

6. Do you visualize it would be necessary under combat conditions to request additional aircraft due to larger operational requirements, battle damage, shortage of parts, or other logistical reasons?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	1	1	4
O.S.	1	2	
STUDENT			
TOTAL	2	3	4

7. Assuming all pilots in the division are trained to meet high standards, do you feel it is necessary to have the same pilots fly aircraft in support of your unit under combat conditions?

	<u>Yes</u>	<u>No</u>
Z.I.	6	
O.S.	2	2
STUDENT		
TOTAL	8	2

8. Assume aircraft of the type normally assigned to you are centralized and maintained by a divisional unit. Furthermore, assume the C-3 element of the DTOC is capable to control all of the aircraft in the division; the DTOC would receive your requirements each evening and dispatch aircraft to you the following morning at the time and place you designate. Assume the aircraft would be available to you for the entire day and that you could request additional aircraft if required. Do you feel this system would be responsive compared to the present concept where you control the aircraft directly?

	<u>More Responsive</u>	<u>Less Responsive</u>
Z.I.		5
O.S.		4
STUDENT		
TOTAL	0	9

9. If you feel the system described in question 8 above would be less responsive, do you feel the responsiveness would be reduced to a point where it would adversely effect your operations?

	<u>Yes</u>	<u>No</u>
Z.I.	5	
O.S.	4	
STUDENT		
TOTAL	9	0

10. Do you feel the system described above in question 8 would come closer to meeting your requirements than the present system?

- (A) more assurance of meeting requirements
- (B) less assurance of meeting requirements

	<u>A</u>	<u>B</u>
Z.I.		5
O.S.		4
STUDENT		
TOTAL	0	9

11. From a logistical standpoint, do you feel logistical requirements (maintenance, spare parts, POL, etc.) required to support your presently assigned aircraft are of a magnitude to favor aircraft being centrally maintained and supported in the division?

	<u>Yes</u>	<u>No</u>
Z.I.		4
O.S.		4
STUDENT		
TOTAL	0	8

12. Do you feel your battalion/troop commanders should have their own organic aircraft for command and reconnaissance?

If so, what would be the logistical impact?

	<u>Yes</u>	<u>No</u>
Z.I.	2	4
O.S.	1	3
STUDENT		
TOTAL	3	7

#### APPENDIX IV

##### Questions for Division General Staff

Total Participants: 19

1. Do you find it necessary to pool aircraft to accomplish missions during FIX's? For instance, do you find it necessary to augment the air mobile company with the cav sqd aircraft for troop movements and movement of supplies?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.		1	4
O.S.		1	4
STUDENTS	4		4
TOTAL	4	2	12

2. Consider the following: the present ROAD organizational concept calls for organic aircraft within each major unit. Proponents to the concept feel it insures responsiveness to the unit commanders and the mission. Opponents feel this leads to inefficiency because any one unit may actually have a temporary excess of aircraft while another unit simultaneously is critically short of aircraft. Do you feel it is necessary to assign aircraft to a unit to insure responsiveness to the commander and the mission?

	<u>Yes</u>	<u>No</u>
Z.I.	5	1
O.S.	2	2
STUDENT	6	2
TOTAL	13	5

3. Reference question 2 above: do you feel aircraft can be used to acceptable efficiency under the present concept?

	<u>Yes</u>	<u>No</u>
Z.I.	5	1
O.S.	4	1
STUDENT	8	
TOTAL	17	2

4. If you feel it is necessary to assign aircraft to a major unit to insure responsiveness and also feel the present system is not efficient from an aircraft utilization viewpoint, which factor is usually overriding?

(A) should assign aircraft to units to insure responsiveness at the cost of optimum efficiency

(B) should assure optimum efficiency at the cost of responsiveness

	<u>A</u>	<u>B</u>
Z.I.	3	2
O.S.		1
STUDENT	6	2
TOTAL	9	5

5. Consider the following proposal: all aircraft are centralized in a single divisional aviation unit. The aviation unit commander, under this

proposal, has the responsibility for providing trained and proficient pilots who are considered combat ready. He further has the responsibility to maintain the aircraft and provide a designated number of aircraft for use in the division each day. The G-3 or the G-3 element of the division has the responsibility to allocate the aircraft to each using unit as requested. The allocation is on a daily basis and on an as required basis for unforeseen requirements. The controlling agency would weigh priorities and make allocations accordingly. Aircraft would be dispatched to the units for the day or shorter periods if required.

- (A) could this system provide optimum efficiency
- (B) could this system provide responsiveness to the unit commanders
- (C) would this system require an increase in manning and equipment in the DTOC

	<u>A</u>		<u>B</u>		<u>C</u>	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
Z.I.	4	2	2	4	3	3
O.S.	3	2	2	3	4	1
STUDENT	5	3	2	6	4	4
TOTAL	12	7	6	13	11	8

6. If you feel that division aviation should be pooled but to a lesser extent than suggested in the above proposal, which units should have their own organic aircraft?

- (A) Div Arty
- (C) Cav Sqd
- (E) All
- (B) Bde HQ
- (D) Avn Bn

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
Z.I.					5
O.S.		1	1	1	2
STUDENT		2	3	3	4
TOTAL		3	4	4	11

7. Assume all division aircraft are centrally pooled in one unit. How would this effect logistics requirements?

- |   |   |
|---|---|
| (A) less maintenance personnel                  | (B) more maintenance personnel                  |
| (C) more repair parts                           | (D) less repair parts                           |
| (E) more maintenance equipment                  | (F) less maintenance equipment                  |
| (G) faster response to maintenance requirements | (H) slower response to maintenance requirements |

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>
Z.I.	3			3		3	3	1
O.S.	3	1	2	2	1	3	3	1
STUDENT	3	1	1	4	1	3	3	1
TOTAL	9	2	3	9	2	9	9	3

8. Where aircraft are assigned to major units as they are now, should the aircraft direct support maintenance function?

- (A) remain in the maintenance battalion
- (B) be in the aviation battalion

	<u>A</u>	<u>B</u>
Z.I.	1	4
O.S.	2	3
STUDENT	7	1
TOTAL	10	8

9. Assume aircraft remain assigned to each major unit, should each unit have their own direct support maintenance capability?

	<u>Yes</u>	<u>No</u>
Z.I.	1	5
O.S.	1	4
STUDENT		5
TOTAL	2	14

10. Assume that all or most of the division aircraft are assigned to a single aviation unit. Do you believe the aircraft direct support maintenance function should remain in the maintenance battalion or be placed in the unit to which the aircraft are assigned?

	(A) maintenance battalion	(B) aviation unit
	<u>A</u>	<u>B</u>
Z.I.		6
O.S.	2	2
STUDENT	6	2
TOTAL	8	10

11. Do you believe artillery, infantry, or armored battalions should have aircraft assigned to them?

	<u>Yes</u>	<u>No</u>
Z.I.	1	5
O.S.		5
STUDENT	2	6
TOTAL	3	16

## APPENDIX V

### Questions for Aviation Battalion Commanders

Total Participants: 19

1. According to FM 1-5 the aviation battalion commander is the principal adviser to the division commander on aviation matters. He also exercises staff supervision over aspects of administration, training, safety, and operations of Army aviation within the entire division and provides technical supervision of aviation training for other units in the division. Do you feel that your effectiveness in accomplishment of these duties would be measurably increased if all pilots were assigned to your unit?

(A) would increase      (B) little change      (C) would decrease

	A	B	C
Z.I.	2	3	2
O.S.	2	1	1
STUDENT	3	3	2
TOTAL	7	7	5

2. Do you feel pilots can be trained to fly all type missions normally flown by a single type aircraft? For instance, could the average pilot be trained to fly a support mission with a Bde in the morning and also fly an armed reconnaissance mission in the afternoon?

	<u>Yes</u>	<u>No</u>
Z.I.	5	1
O.S.	5	
STUDENT	6	2
TOTAL	16	3

3. From an entire division viewpoint, do you visualize it would be necessary to pool aircraft under one control to insure high priority tasks would be accomplished during combat conditions?

	<u>Yes</u>	<u>No</u>
Z.I.		6
O.S.	1	4
STUDENT	1	7
TOTAL	2	17

4. Do you find it necessary to supplement other units in the division with pilots or aircraft during FTX's?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.		3	3
O.S.	2	1	2
STUDENT	3	3	2
TOTAL	5	7	7

5. Do you find it necessary to request aircraft from other units within the division to accomplish your tasks during FTX's?

	<u>Usually</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.		3	4
O.S.	1		3
STUDENT	2	2	4
TOTAL	3	5	11

6. Do you visualize it would be necessary to pool aircraft under combat conditions to insure high priority tasks would be accomplished?

	<u>Often</u>	<u>Frequently</u>	<u>Seldom</u>
Z.I.	1		5
O.S.	1		4
STUDENT			8
TOTAL	2		17

7. Assume all aircraft were assigned to your unit including aircraft maintenance personnel and equipment. Do you feel you could effectively maintain and support aircraft in combat conditions?

	<u>Yes</u>	<u>No</u>
Z.I.	6	
O.S.	4	1
STUDENT	6	2
TOTAL	16	3

8. Do you feel that the present concept whereby the aircraft direct support maintenance function is in the maintenance battalion is satisfactory?

	<u>Yes</u>	<u>No</u>
Z.I.	4	2
O.S.	3	2
STUDENT	3	5
TOTAL	10	9

9. In your estimation, would there be an increase or decrease of men and equipment required to provide organizational and direct support maintenance for the entire division if the aircraft direct support maintenance

function was transferred to your unit? (Assume all aircraft were assigned to you for maintenance and support)

(A) increase in personnel

(C) increase in equipment

(B) decrease in personnel

(D) decrease in equipment

(E) no change

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
Z.I.		2		4	1
O.S.	1		1		2
STUDENT	2	2	1	3	2
TOTAL	3	4	2	7	5

10. Reference question 11, above: Would the quality of maintenance improve if the direct support company was moved to your unit?

	<u>Improve</u>	<u>Decrease</u>	<u>Remain the Same</u>
Z.I.	2	1	2
O.S.	2		1
STUDENT	4	2	1
TOTAL	8	3	4

11. Assume aircraft remain in the units as they are now; do you feel that the aircraft direct support maintenance function should be transferred to your unit?

	<u>Yes</u>	<u>No</u>
Z.I.	3	3
O.S.	3	2
STUDENT	4	4
TOTAL	10	9

12. Do you feel that the added responsibility of aircraft direct support maintenance would seriously detract from your operational responsibility?

	<u>Yes</u>	<u>No</u>
Z.I.		6
O.S.		5
STUDENT	2	6
TOTAL	2	17

## APPENDIX VI

### Questions for Support Command Commanders

Total Participants: 6

1. Do you feel the present concept whereby the aircraft direct support maintenance company is in the maintenance battalion is satisfactory?

	<u>Yes</u>	<u>No</u>
Z.I.	2	1
O.S.	3	
STUDENT		
TOTAL	5	1

2. Do you feel there are objections to a proposal calling for the aircraft direct support maintenance functions within the aviation battalion?

	<u>Yes</u>	<u>No</u>
Z.I.	2	1
O.S.	3	
STUDENT		
TOTAL	5	1

3. Assume all aircraft are placed in a divisional aviation unit for organizational maintenance and support. Assume the direct support maintenance function remains in the maintenance battalion. Would the centralization of aircraft effect the number of personnel, the amounts of repair parts and equipment required in the direct support function?

	<u>Yes</u>	<u>No</u>
Z.I.	1	2
O.S.	2	
STUDENT		
TOTAL	3	2

4. Some people suggest that aircraft direct support maintenance and surface vehicle direct support maintenance organizations should not be under the same battalion. They feel that the nature of the maintenance requires two distinct organizations. What are your views?

- (A) should be in one battalion as it is now organized
- (B) should be two distinct units

	<u>A</u>	<u>B</u>
Z.I.	1	2
O.S.	3	
STUDENT		
TOTAL	4	2

5. Assume the aircraft are placed in one divisional unit for maintenance and support. Also assume the aircraft direct support maintenance function has been transferred to the same unit. How would this system compare with the present system for personnel, parts, and equipment requirements.

- (A) more personnel required      (B) less personnel required
- (C) more parts required      (D) less parts required
- (E) more equipment required      (F) less equipment required
- (G) no change in any

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Z.I.	1	1	1	2		2	1
O.S.	1	2	1	2	1	2	
STUDENT							
TOTAL	2	3	1	4	1	4	1

6. Reference question 4 above: would this system effect your responsibility for maintenance, centralization of information, procurement of parts, etc.

	<u>Yes</u>	<u>No</u>
Z.I.		6
O.S.		
STUDENT		
TOTAL	6	

## APPENDIX VII

### Questions for Maintenance Battalion Commanders

Total Participants: 9

1. Do you feel the present concept whereby the aircraft direct support maintenance company is in the maintenance battalion is satisfactory?

	<u>Yes</u>	<u>No</u>
Z.I.	3	
O.S.	3	2
STUDENT	1	
TOTAL	7	2

2. Do you feel there are objections to a proposal calling for the aircraft direct support maintenance functions within the aviation battalion?

	<u>Yes</u>	<u>No</u>
Z.I.	3	
O.S.	3	2
STUDENT	1	
TOTAL	7	2

3. Assume all aircraft are placed in a divisional aviation unit for organizational maintenance and support. Assume the direct support maintenance function remains in the maintenance battalion. Would the centralization of aircraft effect the number of personnel, the amounts of repair parts and equipment required in the direct support function?

	<u>Yes</u>	<u>No</u>
Z.I.		3
O.S.	4	
STUDENT		1
TOTAL	4	4

4. Some people suggest that aircraft direct support maintenance and surface vehicle direct support maintenance organizations should not be under the same battalion. They feel that the nature of the maintenance requires two distinct organizations. What are your views?

- (A) should be in one battalion as it is now organized
- (B) should be two distinct units

	<u>A</u>	<u>B</u>
Z.I.	3	
O.S.	3	2
STUDENT	1	
TOTAL	7	2

5. Assume the aircraft are placed in one divisional unit for maintenance and support. Also assume the aircraft direct support maintenance function has been transferred to the same unit. How would this system compare with the present system for personnel, parts, and equipment requirements?

- (A) more personnel required
- (B) less personnel required
- (C) more parts required
- (D) less parts required
- (E) more equipment required
- (F) less equipment required
- (G) no change

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Z.I.	1	1	1	1	1	1	1
O.S.		3		3		3	2
STUDENT				1		1	
TOTAL	1	4	1	4	1	4	3

6. Reference question 4 above: would this system effect your responsibility for maintenance, centralization of information, procurement of parts, etc.

	<u>Yes</u>	<u>No</u>
Z.I.	3	1
O.S.	2	2
STUDENT	1	
TOTAL	6	3

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